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Petrositis*

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The literature on this subject is available to everyone, and since my subject was not limited to any particular phase, I will confine this paper to my own experience with diagnosis, operations, results and the conclusions I have reached as a result of managing a few cases of petrositis.

My first acquaintance with this subject began in 1927, when papers began to appear on Gradenigo's syndrone; i. e. pain behind the eye and paralysis of the corresponding sixth nerve, following or coincident with suppurative otitis media.

The pain behind the eye was explained by irritation of the gasserian ganglion and the paralysis of the sixth nerve by a periostitis of the petrous portion of the temporal bone pinching the nerve. These being necessary for the diagnosis of petrositis.

Since it is possible that some of you may have become a little uncertain about the anatomy of this region I will recall some of the surgical landmarks to your attention.

The petrous pyramid is roughly a three sided pyramid with base laying toward the middle ear, and the apex approaching the opposite apex in the mid line. It articulates with the occipital bone below and behind and with the greater wing of the sphenoid anteriorly.

The superior petrosal sinus runs along the top side and the inferior petrosal sinus runs below, joining the lateral and sigmoid sinuses and the jugular bulb with the cavernous sinus anteriorly.

The surfaces of the pyramid, three in number, face superio-posteriorly, superior-anteriorly and inferiorly. The tentorium runs along the superior-posterior edge dividing the middle fossae from the cerebellar. This accounts for the fact that if the cells along the posterior edge are infected, the pus spreads to the cerebellar fossa, while if those in the front side are infected the pus spreads to the middle fossae.

The gasserian ganglion lies in front and a periostitis of the anterior cells is apt to produce irritation of this ganglion and pain behind the eye.

The sixth nerve emerging from the lower border of the pons runs forward across the sharp superior edge and is likely to be pinched by a periostitis in this region.

The greater superficial petrosal branch of the seventh nerve emerging through a foramen on the anterior side and joining the great deep petrosal to make the nerve of the pterygoid canal and eventually part of the spheno-palatine ganglion is also likely to be affected, and according to Towson, of Philadelphia, is the real cause of the pain behind the eye rather than irritation of the Gasserian ganglion.

The internal carotid artery indents the anterior surface, and therefore, infection along the anterior side lies in close relation to this artery and the Eustachian tube.

Abscesses in this region may also rupture downward into the pharynx, rather than into the cranial fossae.

The cellular structure of the pyramid is the factor that determines the type of infection rather than the organism itself.

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The pyramid in its development has a red marrow-like structure like long bones, and may have an actual osteomyelitis, rather than the osteitis of the mastoid. For this region one may be able to eradicate infection there by puncturing a tip cell in the apex rather than by complete removal as is necessary in the mastoid.

The internal auditory meatus admitting the seventh and eighth nerves intermedius is in relation with the posterior surface. So when there is also diffuse labyrinthitis either latent or manifest, there is considerable danger of posterior fossae meningitis or brain abscess.

The ductus endolymphaticus of the vestibular system also enters the posterior fossae, while the ductus cochlearis enters the middle fossae, accounting for meningitis in the cerebrum following purulent labyrinthitis.

It must be remembered with the base of the pyramid directed externally, there is plenty of room for cellular structure posterior to the semi-circular canals, and also anterior and inferior to the cochlea. When diseased bone is found leading inward past the semi-circular canals, the dura may be lifted and the cellular structure removed, sheletonizing the posterior and horizontal canals, and pus may be drained forward into the mastoid wound without opening the labyrinth.

In fact, in doing a thorough simple mastoidectomy, this happens much more often than we think. These are really petrositis infections that have not progressed to the tip cells. Therefore one does not necessarily need to have halisteresis and Gradenigo syndrome and meningeal symptoms to have a petrositis.

In 1927 one of the nurses at University Hospital developed a low grade streptococcic acute otitis media. The drum was opened because of redness, fever, pain and impaired hearing, but no bulging. There was very little discharge and no relief from symptoms. Hot irrigations, suction, anti-streplococcic serum and supportive treatment did not improve the condition. After about one week of this X-Ray showed a cloudy mastoid, but no breaking down. Simple left mastoidectomy was done. A typical streptococcic hemorrhagic mastoiditis was found. During the next week she continued to have fever, pain behind the left eye and headaches, but no ocular palsies.

Spinal puncture showed increase in globulin and a large number of polys but no bacteria. Petrositis was considered, but on account of no sixth nerve paralysis and nothing definite by X-Ray, we thought she had a circumscribed basilar meningitis or abscess.

It was reoperated and the dura raised from the posterior surface and a search made for extra dural abscess and subdural abscess and nothing certain was found. She died three days later, and autopsy showed basilar meningitis and a large apicol abscess in the pertous tip. Perforation of this tip with a hook at the second operation would probably have saved her life.

The next case recognized was a six-year-old colored girl, seen in the clinic. The parents had left her there and there was no history. Examination showed both ears discharging profusely and temperature 104 degrees. She could not hear any sound with either ear. She had perverted spontaneous irregular nystagmus. She also had paralysis of both sixth nerves. She was practically comatose and was vomiting and had positive Kernig and ankle clonus. Spinal puncture was done and greatly increased number of cells and streptococcic were found in the spinal fluid.

Diagnosis was made of bilateral acute mastoiditis, acute diffuse manifest purulent labyrinthitis, acute petrositis and acute diffuse meningitis. These diagnosis were confirmed at autopsy.

Eagleton had in 1929 come out with his article on unlocking the petrosis pyramid, and there has followed many variations of the surgical approach by Kopetsky, Lempert and others.

The consensus of opinion seems to be, and my own experience has been that complete mastoidectomy, Whiting type, removing everything down to the inner table with especial care in Trautman's triangle and to the region above, anterior to and medial to the antrum will eradicate all the petrous infection cases that have not progressed inward past the inner ear and infected the apex cells. We have had three or four of these cases which we recognized at the time and probably several not recognized, that made uneventful recoveries on a complete simple mastoid operation.

The next apex case diagnosed was a woman at University Hospital, about fifty years old, with an acute mastoiditis incompletely operated elsewhere. Because of meningeal symptoms and a dead labyrinth, she was kept on spinal punctures and supportive treatment until her manifest diffuse acute purulent labyrinthitis had become latent. X-Rays showed considerable halisteresis in the petrous portion. This is best seen in my opinion by pictures made in Stenver's position, with the petrous portion showing through the orbit. Meantime she had developed a sixth, seventh, eighth, ninth and tenth nerve paralysis, meningeal irritation, but no evidence of an expanding lesion in the brain (abscess). She also had a labyrinth that could not be stimulated and no hearing in that ear.

Radical mastoidectomy was done, then the dura raised inward above the internal auditory meatus, the semi-circular canals were sheletorized and the posterior superior petrous cells removed inward toward the tip. Some pus and adhesions were encountered toward the apex. We could not perforate the apex with a hook as suggested by Eagleton in his unlocking operation. Since the labyrinthitis was latent, we then went back to the middle ear, lifted the seventh nerve out of its groove and punctured the promontory after the manner of Hinsberg and proceeded to exenterate the cochlea and going forward and inward along the back side of the internal caratid artery the tip was reached and a drain put into the apex. A flat rubber drain was placed beneath the dura and posterior surface to drain the extra dural abscess found there. The woman made a slow but continuous recovery, and should regain the use of all nerves except the eighth and seventh. I have not seen her in two years.

CONCLUSIONS REACHED

1. A complete simple mastoidectomy will eliminate most cases if done early.
2. The petrous tip should be reached along the posterior superior surface if the inner ear is not infected.
3. If infected, the apex may be reached through the cochlear portion when the labyrinthitis has become latent.
4. The sixth nerve involvement of Gradenigo's symptoms may not be present, and if so indicates a late case.
5. Halisteresis or loss of calcium salts in the tip comes late.
6. An acute mastoid completely operated that continues to run fever after two weeks post-operative should be examined carefully for suppuration of the apex of the petrous pyramid.

Gout (Metabolic Arthritis)*

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A disease often not promptly recognized, due to its relative rareness in this part of the country, is that of the metabolic disturbance known as gout. Gout is a chronic anomaly of the purine metabolism in which blood and tissue fluid uric acid is increased. Clinically it is characterized by acute attacks due to the specific irritating effect of sodium monourate deposition in and about the joints.

Two forms of gout are often noted, designated as regular or acute and irregular or chronic. Acute gout is characterized by severe recurrent attacks associated with arthritis, often appearing in a person of good health, with intervals between attacks being months or years. The intervals between attacks decrease gradually as the disease runs its course. Chronic gout manifests itself by the presence of permanent deformity and crippling of the joints. There will be mild frequent recurring attacks of arthritis or a more or less constant state of arthritis. Chronic interstitial nephritis will often be present in chronic gout.

Gout may also be listed as primary or secondary. Primary gout will reveal no nephritic disease and is apparently due to an inherited constitutional tendency. Secondary gout usually appears in cases in which chronic nephritis is already present at the time of the first attack.

The exact cause of gout is as yet unknown. The role of uric acid in gout is not well understood. Uric acid is a normal blood constituent. It appears that the excretory power of the organism in respect to uric acid is impaired in practically all cases of gout. Predisposing factors, aside from hereditary predisposition, in the causation of gout, are excess alcoholic ingestion, over-eating, long continued mild chronic lead poisoning, and a sedentary form of living.

Gout often appears in the latter half of a person's lifetime. Males are much more frequently affected than females, it being rather rare in females.

There seems to be a geographical distribution in respect to gout, it being known to occur more often in Germany, England and Holland, exactly where the drinking of malt and wine liquors is most common and where the climate is unfavorable.

The pathologic anatomy is due to deposition of sodium monourate either in the synovial fluid or membranes, or at times in the epiphysis or cartilage of bones forming the joint. It may also be deposited in bursae, tendon sheaths, and in the periosteum. Deposition of uric acid in cartilage is quite fre-

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quent. Under the microscope it reveals itself as long, crystalline needles. The uric acid crystals may cause necrosis. They can be re-absorbed following their deposition. In chronic gout re-absorption does not occur. Chalky-like deposits remain when complete crystallization has ensued.

Presence of tophi in subcutaneous, fibrous, and fibro-cartilagenous tissues is a characteristic finding in chronic cases.

A typical case of acute gout, when the physician is more or less alert in respect to its presence, is quite characteristic. Diagnosis from a clinical standpoint is not difficult. Often it occurs suddenly without premonitory symptoms, usually during the night. At

Fig. 1 (Case 1). Note defect shadows in terminal end of each first metatarsal bone.

times there may be prodromal symptoms, such as loss of appetite, gas eructations, diarrhea, constipation, and cramps in the calves of the legs. Sydenham, himself a sufferer, has described gout in such accurate fashion that his description even to the present day is an excellent word picture of what occurs during an attack. As a rule, but not always, the right or left big toe joint will be affected during the first attack. Pain, swell-

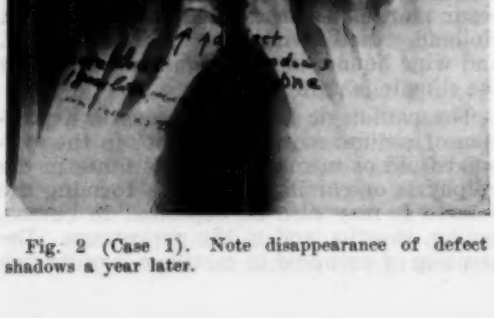

Fig. 2 (Case 1). Note disappearance of defect shadows a year later.

Fig. 3 (Case 2). Note defect shadows arrows point to, caused by urate desposits.

ing, some fever, may occur during the first night. This localized pain will recede as the dawn appears and reappear during the second night. Gradually over a period of a week to ten days the attack resolves itself and the patient seemingly returns to a normal state of health. The joints of the lower extremity are most often affected; also the tendons of the lower extremities will more often be affected. Lumbago and muscular cramps of the calf muscles are often present.

From a laboratory standpoint we find that there may be a white blood cell count often

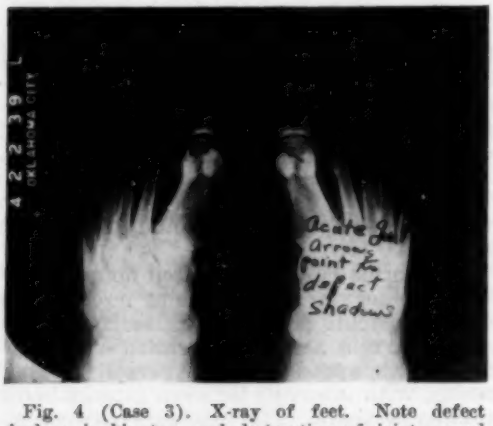

Fig. 4 (Case 3). X-ray of feet. Note defect shadows in big toes and destruction of joint caused by urate deposits.

as high as 20,000. As a rule the blood uric acid is elevated above 5.0 mgm. per 100 cc. of blood. It may run up to 9.0 or 10.0 mgm. per 100 cc. of blood. During an acute attack the amount of blood uric acid is often less than it is between attacks. Excretion of uric acid occurs at a heightened rate at such time. Urinary uric acid output may often drop before an attack, increases during the attack, and then decreases. It is quite likely that the febrile condition during an acute attack helps to increase uric acid elimination. Experiments have shown that a

case of gout will eliminate a definite quantity of ingested uric acid over a longer period of time than the normal case. This indicates that the elimination of uric acid, rather than a disturbance in its formation, is an important factor in the genesis of gout.

Chronic gout, as a rule, is a terminal part of regular or acute gout. It may be chronic from the start. Permanent deformity and disability of involved joints plus frequently occurring or constant arthritis characterize it. In contradistinction to acute gout, joints of the upper extremities are more often affected than those of the lower.

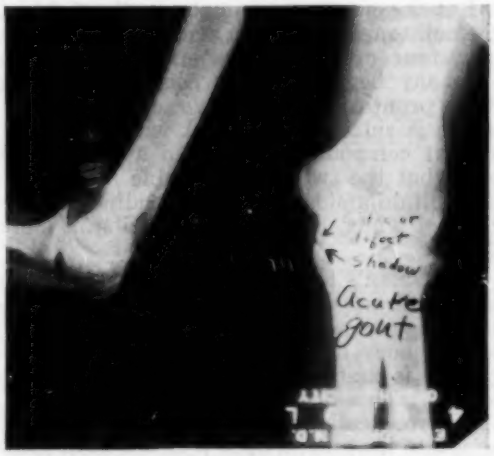

Fig. 5 (Case 3). X-ray left elbow. Arrows point to defect shadow caused by urate deposits.

Deposits of uric acid crystals in the cartilages, bursae, and ligamentous tissues in and about joints are very common, as well as tophi in the subcutaneous tissues and muscular aponeuroses. Because of the superficial location of some of these tophi, ulcerations and sinuses may occur. Tophi often occur late in the disease, usually ten years after the initial attack.

Defect shadows in the bones and atrophic changes of the bones together with exostoses are often present. They may resemble defect shadows in the bones of chronic arthritis. However, defect shadows in chronic arthritis usually are smaller and more sharply circumscribed than those in gout.

To make a diagnosis of gout one should obtain a characteristic history; look for defect shadows in the X-rayed joint; and obtain as a rule an increased amount of blood uric acid. The patient usually is of the florid, somewhat obese type. He often gives a history of over-eating and over-ingestion of alcoholic stimulants. Important from a laboratory standpoint is the presence of a high uric acid with a normal amount of non-protein nitrogen in the blood.

* * *

CASE 1. Patient develops attacks of severe pain localized to one or more joints at irregular intervals with localized swelling, redness, and some temperature during the first twenty-four hours. Pain usually begins at night. The big toe joints were first involved. He is a heavy eater and markedly overweight. There is no family history of gout. Blood uric acid 9.3 mgm. Blood non-protein nitrogen 42.5 mgm.

Fig. 6 (Case 3). X-ray left elbow showing disappearance of defect shadow after the acute attack.

* * *

CASE 2. This patient developed sudden severe localized pain associated with swelling, redness, and some temperature. The pain began at night. It was quite bad the first night. Swelling was limited to the big toe joints. Patient is a heavy eater and drinker and also overweight.

* * *

CASE 3. Patient, for seven years, has had recurrent acute attacks of pain, swelling, and localized redness, lasting about ten days. These would entirely disappear. Swellings were at first localized in either one of the big toe joints. Later swellings have appeared in other joints. The attacks have been appearing frequently lately.

* * *

REFERENCES:

All standard books on practice of medicine, and both loose-leaf systems of medicine.

The Chemotherapy of Infectious Diseases*

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HISTORICAL NOTE

Attempts to treat diseases by chemical agents have been made by physicians since the very earliest times. In ancient Egypt drug prescriptions were used to treat all kinds of ailments, though, as we now know, this chemotherapy was based chiefly upon guess-work.

In some instances, doctors hit upon chemical agents that were valuable in treatment. Thus, mercurial ointments were used in China as early as 1100 B. C., but whether as a remedy for syphilis or not, no one seems to be sure. Certainly early in the 16th century, mercurial ointment was found to be valuable in the treatment of syphilis in Europe.

In the 17th century, Peruvian bark (which contains quinine) was found to be valuable in the treatment of malaria; the first European to be thus treated was the Countess of Chinchon who was in Lima and, since then, Peruvian bark has been known as "cinchona bark."

In Brazil, ipecac was much used by the natives in the treatment of dysentery and in 1672 began to be used in France, the secret composition of the remedy being purchased later by Louis XIV's government for 1000 louis d'or so that after 1688 it was available to the general public.

It was not, however, until after the sciences of organic chemistry and bacteriology underwent their great development in the nineteenth and twentieth centuries that chemotherapy could be established upon a more rational basis through clinical observation and experimentation. This modern chemotherapy achieved its first great success as a result of the road-breaking experiments of Paul Ehrlich who set out systematically to test a great variety of components of arsenic in the hope of finding one that would cure syphilis rapidly. After testing no less than 605 different arsenicals, he finally in 1910, hit, in the 606th preparation, upon "salvarsan" (now called "arsphenamine") which could be given with comparative safety to patients and yet was markedly poisonous to the infectious agent *Treponema pallidum* that causes syphilis.

A little later, the value of chaulmoogra oil for the specific treatment of leprosy, an endemic scourge known to be prevalent in Egypt since 1500 B. C. and since widespread in all continents, was determined. The cause of leprosy, the *Bacillus leprae*, was discovered by Hansen in 1871.

But the greatest triumphs in the field of chemotherapy have been achieved during the past four or five years since Domagk in Germany began to treat certain infections with prontosil (the active constituent of which is sulfanilamide). A whole series of similar compounds have been experimented with, but the two most valuable in practice are sulfanilamide and sulfapyridine, the effects of which I shall soon describe in more detail.

That man's long tedious search for chemical substances that will help destroy infectious agents without serious injury to the human body itself should have been so successful is matter for the deepest congratulation. Those "magic bullets" (as D. B. Armstrong calls them) can now be cautiously shot into the human body with the most gratifying results in a whole series of infectious processes. Medicine, today, has to thank chemotherapy for some of its most significant advances.

MALARIAL INFECTIONS

Since Laveran's demonstration of certain protozoan parasites (plasmodia) in the blood of malarial patients, our knowledge of the disease has made great strides. These parasites show an alternation of generations, the asexual propagation (schizogony) being carried on in the blood of the intermediate host (man), the sexual propagation (gamogony or sporogony) being carried on largely in the gastrointestinal canal of the definitive host (mosquito).

Benign tertian malaria is due to *Plasmodium vivax*, quartan malaria to *Plasmodium malariae* and malignant tertian malaria to *Plasmodium falciparum*. Of these three species, each may occur in more than one "strain" and the biological susceptibility of a parasite to the action of drugs may vary with different strains, so that from the chemotherapeutic point of view strains may perhaps be as important as species (James, 1932). *Quinine Treatment.*—In benign tertian malaria (*P. vivax*), 1 gm. daily for sev-

*Read by invitation before the Post-Graduate Assembly of the Oklahoma City Clinical Society, Nov. 1st, 1939.

en days will kill off all the asexual forms (trophozoites or schizonts); indeed, on the average, they are no longer demonstrable in the blood after the third day of treatment.

In quartan malaria (*P. malariae*), the same effects are obtained as in benign tertian.

In malignant tertian (*P. falciparum*), 1.3 grm. quinine daily should be given for seven days; it kills off the asexual forms in about four days. In some countries it has been found necessary to give 2 grm. daily to obtain a rapid effect.

Quinine appears to be able to kill the asexual forms (gametocytes) of quartan and benign tertian malaria but has only very slight effect upon the fully developed gametocytes of malignant tertian malaria though it does impede the formation of the pregametocytes of *P. falciparum.*

Relapses are prone to occur after treatment of all three forms of malaria when treated with quinine alone.

So-called *totaquina* is almost as efficacious as quinine in lowering the temperature and in clearing the peripheral blood of malarial parasites when used in ordinary cases of malaria. It costs only about one-seventh the price of quinine, a matter of importance in country in which malaria is widespread. Thus, it has been estimated that in the Philippine Islands alone the market could absorb some thirty-three tons of totaquina (P. E. Russell).

Atebrin (or quinacrine) Treatment.—This drug, given in daily doses of 0.30 grm. (for adults) is very efficacious in the treatment of all forms of malaria. In benign tertian malaria, the asexual forms (trophozoites) will disappear as a rule after three days and the same is true in the treatment of quartan malaria. In the treatment of malignant tertian malaria, atebrin is somewhat more efficacious than quinine, the asexual forms of the parasite disappearing from the peripheral blood after the fourth dose in 90 per cent of the cases.

On the gametocytes, the action of atebrin is similar to that of quinine.

Plasmoquine (or plasmochin) Treatment.—This drug has almost no effect upon the asexual forms of the parasite in malignant tertian malaria, though it may reduce their numbers some in benign tertian and in quartan malaria. But the great advantage of plasmoquine lies in the fact that it has a pronounced effect upon the sexual forms (gametocytes) in all varieties of malaria, including malignant tertian in which the gametocytes are practically unaffected either by quinine or atebrin. The use of this chemical is therefore most important for the prevention of relapses.

When quinine is used, plasmoquine in doses of 0.02 grm. to 0.03 grm., twice a week may be used at the same time; but plasmoquine should not be used simultaneously with atebrin since the toxicity of each of the drugs is aggravated. When atebrin is used (0.30 grm. daily for from five to seven days), it may be followed after cessation of the atebrin treatment by plasmoquine in daily doses of 0.02 grm., for five days.*

SYPHILITIC INFECTIONS

In spite of increase of public education regarding the dangers of venereal infections, syphilis is still far too prevalent; over half a million new cases of syphilis apply yearly in the United States for treatment for the first time, some of them having had syphilis for months or even years before seeking aid. It is unfortunate, too, that four out of five patients treated early in the course of the disease receive less than the minimum amount of therapy necessary to render them non-infectious.

Mercurial Treatment.—For a long time, a series of courses of mercurial ointment (2 to 4 grm. rubbed into the skin six nights weekly for five weeks) supplemented by the use of the iodides represented the standard method of treatment for syphilis and when faithfully carried out over a long enough period gave results that were in general satisfactory. But the use of blue ointment was such an unpleasant procedure that deep intramuscular injections of mercurial salts (e. g., 0.06—0.12 grm. of salicylate of mercury in 10 per cent solution) were in later years much preferred. One injection every five to seven days until thirty injections had been given constituted a course; the courses were repeated for two years or longer with rest-periods of a month between courses.

Combined Arsenical and Bismuth Treatment. — Arsphenamine, neoarsphenamine, tryparsamide, aldarsone, mapharsen and triarsen are the arsenicals now most widely used in the treatment of syphilis. Intravenous injections of neoarsphenamine (0.6 grm. in 300 cc. every five days for six or eight injections, followed by a series of intramuscular injections of bismuth compound, the arsenical and bismuth treatments being alternated as a routine combined treatment until the Wassermann reaction becomes permanently negative are now regarded as most satisfactory.

If syphilis is treated early and thoroughly, the so-called parasyphilitic diseases (tabes dorsalis and dementia paralytica) will be prevented but all too frequently when treatment has been delayed or has been in-

*For a full discussion of the modern treatment of malaria the Fourth General Report of the Malaria Commission of the League of Nations (1927) should be consulted.

sufficiently vigorous these serious diseases are encountered.

In tabes dorsalis (locomotor ataxia), success can be achieved in many cases by the use of combined routine treatment (with twenty intravenous injections of arsphenamine and forty intramuscular injections of a bismuth preparation) along with intraspinal therapy (at least seven intrathecal injections of serum from 50 cc. of blood withdrawn a half hour after intravenous injection of arsphenamine). Excellent clinical results can thus be obtained in about 25 per cent of the cases of tabes, moderately favorable results in about 40 per cent of the cases, less favorable effects in 20 per cent. In at least 10 per cent of the cases, however, the disease is likely to progress clinically no matter what treatment is used.

In dementia paralytica (general paresis) combined routine treatments with arsenicals and bismuth do not suffice, though if these be suplemented by fever therapy (malaria or hypertherm) for ten weekly sessions of five hours each during which a temperature of from 105 degrees to 106 degrees is maintained, mapharsen or bismarsen being injected soon after the fever has reached its maximum height, gratifying results may be obtained. In about one-third of the cases of general paresis advanced enough to require care in psychiatric institution and in about 85 per cent of incipient cases of general paresis so-called "ecomonic remissions" can be secured.

STREPTOCOCCAL INFECTIONS

A whole series of infectious processes met with clinically are due to streptococci, especially hemolytic streptococci. The majority of these are due to the beta hemolytic streptococcus, a smaller proportion of them to the alpha hemolytic streptococcus. Thus erysipelas, scarlet fever, most cases of septic sore throat, acute tonsillitis, acute sinusitis, many cases of otitis media and mastoiditis, cases of hemolytic streptococcal meningitis, many local puerperal infections, puerperal fever (and other forms of hemolytic streptococcus bacteremia), some pleurisies, empyemas and some cases of cystitis and pyelitis have been shown to be due to the beta hemolytic streptococcus. On the other hand, sub-acute bacterial endocarditis is due to the alpha hemolytic streptococcus (*Streptococcus viridans*).

The vast majority of the infections due to beta hemolytic streptococcus can now be cured by the administration of the extraordinary chemical known as sulfanilamide (p-aminobenzensulfonamide). Unfortunately it has but little effect upon infections due to Sterptococcus viridans (alpha hemolytic streptococcus), though an occasional favorable result after the use of prontosil has been reported (cf. Ralph Major).

Though sulfanilamide was synthesized by the organic chemist Gelmo as long ago as 1908, its great value as an anti-streptococcal agent did not become fully recognized until about three years ago. It is true that certain azo derivatives (since shown to contain sulfanilamide) were found to exert an action against streptococci in test-tube experiments and even in mouse septicaemia due to hemolytic streptococci as early as 1909 by Horlein. Investigations under Domagk led to the development of two azo compounds known as prontosil I and prontosil II, both of which yielded favorable results in the treatment of diseases in animals (mice; rabbits) due to beta hemolytic streptococci. From 1932 on, cures of streptococcal infections in man began to be reported from Germany. French investigators in 1935 proved that the active principle in the prontosils was para amino benzene sulfonamide (now known simply as sulfanilamide) and that the azo linkage was unnecessary, a view that was adopted in 1936 by Domagk and since confirmed by all investigators. Intensive research led to the production of about 200 sulfonamide or closely related compounds, but as anti-infectious agents the two that are of the greatest importance are sulfanilamide and sulfapyridine. In America, the works of (1) P. H. Long and E. A. Bliss, and (2) R. R. Mellon, P. Gross and F. B. Cooper in connection with sulfanilamide therapy of bacterial infections have been of outstanding importance.**

When treating any severe infection with sulfanilamide it is important to secure a concentration of from 10 to 15 mgms. of free sulfanilamide in the blood as quickly as possible and to maintain this concentration until the infection is cured. In the majority of patients this can be achieved by oral administration of the chemical. An initial dose by mouth of 0.07 grm. per gilo of body weight (0.6 grains per pound of body weight) of the drug will usually produce a blood-level of 8 to 11 mgms. per cent of free sulfanilamide within four hours. After this initial dose, adults should receive at four-hourly intervals, 1.2 grm. (20 grains) of the drug in order to maintain the desirable blood-concentration.

If the patient is vomiting or comatose, oral administration is of course impracticable and the sulfanilamide should then be given parenterally. In the average adult one injects (by hypodermoclysis) as an initial dose 6 grm. of sulfanilamide (in 600 cc. of a sterile

**cf. Long (P. H.) and Bliss (E. A.) The clinical and experimental use of sulfanilamide, sulfapyridine and allied compounds, N. Y., 1939, MacMillan, 319 pp.; (2) Mellon (R. R.), Gross (P.) and Cooper (F. B.). Sulfanilamide therapy of bacterial infections, Baltimore, 1938, Thomas, 388 pp. (3) Keefer, (C. S.) and others. Symposium on Sulfanilamide. Med. Clinic, N. America, 1939, 23: 1133-1244.

1 per cent physiological salt solution) and follows this at eight-hourly intervals with from 200 to 400 cc. more of the same solution. The fluid intake should be somewhat restricted (not over 3500 cc. daily) since larger amounts of fluid tend to too rapid excretion of the sulfanilamide by the kidneys so that the blood concentration of the drug is reduced below adequate levels. One gives half as much sodium bicarbonate by mouth as the amounts of sulfanilamide used (to prevent acidosis).

When the disease has come fully under control, the amount of sulfanilamide given may be slowly decreased for a week or until the patient is able to be up and about; and after this the treatment may, as a rule, be safely discontinued.

During treatment, no alcohol should be taken, the patient should be kept in bed and saline laxatives and other cathartics should be avoided.

In some patients toxic effects may appear during the administration of sulfanilamide. Though many tolerate the drug well, some complain of headache, dizziness, difficulty of concentration, loss of appetite or even nausea and vomiting.

Most patients taking sulfanilamide become somewhat cyanotic, but the appearance of this symptom is not a contra-indication to the continuance of the treatment.

A few patients will develop a little fever (independent of the fever due to the infection) during the course of the treatment by sulfanilamide, in which even the use of the drug should be temporarily discontinued. Later on, a test dose of 0.3 grm. may be given and if the fever does not recur within 12 hours thereafter the treatment may be continued cautiously.

Mild hemolytic anaemias are very common among patients receiving sulfanilamide but as a rule they develop slowly and are not severe. In a small percentage of the cases, however, especially in children, an acute hemolytic anaemia may develop in from one to three days after the treatment has been started with rapid fall in the red cell count (two million cells within 24 hours) and with some leucocytosis or with leukopenia. In such cases, the drug should be discontinued and a blood transfusion given. In relatively rare instances, marked leukopenias and even agranulocytosis may appear in the course of sulfanilamide therapy, in which event the use of the drug should be immedately stopped, excretion by the kidneys favored by abundant water intake, and blood transfusions given. Practitioners giving sulfanilamide should obviously make it a rule to have complete blood counts made daily during the treatment.

Sulfanilamide is undoubtedly an extremely valuable addition to our therapeutic armamentarium. Indeed its effects are so magical in beta streptococcal and certain other infections that there is danger that it may be used too indiscriminately and thereby come later on into underserved disrepute. It should be used only when need for it is clearly indicated with strict observance of the precautions referred to.

MENINGOCOCCAL INFECTIONS

In meningococcal meningitis and meningococcal septicaemia the results of sulfanilamide therapy are probably as good as those obtained by treatment with anti-meningococcus serum. Oral administration of sulfanilamide is quickly followed by the appearance of the drug in the cerebrospinal fluid so that intrathecal administration may not be necessary. Cultures of the spinal fluid usually become negative after from 1 to 3 days of treatment. In severe cases, however, it may be well to inject a 1 per cent solution into the subarachnoid space by the gravity-flow method. One first withdraws some fluid by lumbar puncture and then injects a smaller amount of the 1 per cent solution than the amount of fluid that has been withdrawn. One may, of course, combine the injection of anti-meningococcus serum with sulfanilamide therapy if desired, though treatment by sulfanilamide alone will usually suffice. If anti-meningococcus serum be used, it should as a rule be given in a large intravenous dose, rather than intrathecally, so as to disturb the patient as little as possible.

GONOCOCCAL INFECTIONS

Surprisingly good results have been obtained from the oral administration of sulfanilamide in acute gonorrhoea (if treated early), in gonococcal septicaemia, in gonococcal meningitis, in gonococcal arthritis and in gonococcal opthalmia. The chemical should be used in the same way as in streptococcal infections.

Sulfapyridine seems also to be efficacious in overcoming gonococcal infections. Some give it in ambulatory cases of gonorrhea, but I prefer to keep patients who are taking either sulfanilamide or sulfapyridine at complete rest in bed.

Dimethyl-disulfanilamide, much vaunted in Germany for the treatment of gonococcus infections, is more toxic than sulfanilamide, the remedy of choice in America.

TRACHOMA

Recent reports indicate that this infectious disease of the eyelids responds well to treatment with sulfanilamide.

PNEUMOCOCCAL INFECTIONS

In the various pneumococcal infections (pneumonia, pneumococcus bronchitis, pneumococcus septicaemia and pneumococcus

meningitis) we have had to depend largely until recently upon the use of specific anti-pneumococcal sera. But there are no less than thirty-two different types of pneumococci and treatment by sera involves typing of the organism and the use of the particular anti-serum indicated. In several types, good results are obtained by specific serum treatment; in other types, the results have been very disappointing.

But now the whole picture is changed. It is even possible that the tedious work of typing may later on become entirely superfluous except for its scientific interest, for the majority of pneumonias and other pneumococcal infections (no matter what type of pneumococcus is concerned in the etiology) can, unless contemporary experience should prove to be illusory, be successfully and speedily overcome by the administration of another sulfonamide compound, namely, sulfapyridine (M & B 693).

In my long clinical experience I cannot recall any greater surprises than those experienced in watching, during this year, the effects of sulfapyridine upon patients suffering from lobar pneumonia. Seeing a man who has suddenly had a chill followed by shortness of breath, pain in one side of the chest, rapid breathing, cough with blood-tinged sputum containing pneumococci, and on physical examination pleural friction and fine crepitant rales—the typical signs of pneumonia, we formerly expected to observe high fever for from five to seven days accompanied by outspoken consolidation of a lobe of the lung, ending too often fatally, though sometimes in recovery after crisis. Now we give an initial dose of 30 grains of sulfapyridine by mouth and follow this by a second dose of 30 grains at the end of four hours, after which 15 grain doses may be given every four hours until at least 135 grains have been given; after this, doses may be given at longer intervals for four or five days. The effects are often simply marvelous—the temperature falls quickly and the other symptoms rapidly clear up. It is not uncommon in the hospital to observe a normal temperature after 24 or 36 hours and to find the patient who has been so very ill, sitting up in bed and asking when he can go home! Certainly the mortality rate can be greatly reduced in lobar pneumonia by the use of sulfapyridine; mortality rates of from 2 to 10 per cent in several series of cases have been reported from various parts of the world. Similar results are observable of the treatment of bronchopneumonias due to the pneumococcus.

In persistent pneumococcus bronchitis without pneumonia the results may be equally striking. If you will pardon a personal reference, I may tell you that winter before last I was compelled to remain in bed for over three months with purulent bronchitis due to the pneumococcus (type XVIII), despite good nursing, inhalations, and treatment by diathermy. On recovery, I was given pneumococcus vaccines in the hope of preventing further attacks. But last winter I suddenly began to expectorate purulent sputum again and wondered if I were in for another long siege of the malady. Thanks to Perrin H. Long, however, I secured some tablets of sulfapyridine and after the second day the sputum ceased to be purulent! In persons with recurring pneumococcus infections, Felton's vaccine would seem to be well worthy of trial as a prophylactic measure.

Sulfapyridine is not so readily absorbed on oral administration as is sulfanilamide; individuals show rather marked variations in their capacity to absorb the drug. It is best to give it in powder form, suspending the drug in six ounces of water or milk. When there is severe vomiting, the sodium salt of sulfapyridine as prepared by Marshall may be given (3.8 grm. in 5 per cent solution) slowly by the intravenous route in hospitals, this dose being repeated after five hours. None of the solution should, however, be permitted to escape into the tissues around the vein or a slough will occur owing to the high alkalinity of the fluid.

In using sulfapyridine one observes the same precautions as in using sulfanilamide. The patient remains in bed and has daily blood examinations to make sure that the hemoglobin and the white cell count do not go too low; the NPN of the blood should also be followed.

A few patients will develop hematuria or an acute nephropathy in the course of sulfapyridine therapy, apparently because of the formation of acetylsulfapyridine calculi in the renal tubules and pelves. To prevent this complication, Long and Bliss suggest the routine administration of sodium bicarbonate when the drug is used in the hope that an alkaline urine may prevent the precipitation of acetylsulfapyridine in the urine. If hematuria should develop, the use of the drug should be discontinued at once. Even before the hematuria develops a rise in the NPN of the blood is a danger signal that should make one stop the administration of sulfapyridine.

In large medical centers, where typing of the pneumonia is easily done, sulfapyridine treatment should be supplemented by specific serum treatment, since, as Colin M. McLeod has shown, the two are synergistic in experimental infections in mice and combined treatment in man may therefore be found to be more efficacious than either sulfapyridine or serum alone. In such centers the pneumococcus should be typed immediately

and a blood for culture should be withdrawn before beginning the treatment with sulfapyradine. If pneumococcus meningitis or peritonitis is suspected, it is also desirable to secure material for culture before the treatment is instituted. A complete blood examination including determination of the NPN content and an examination of the urine before giving the chemical will permit of daily comparisons during its administration.

STAPHYLOCOCCAL INFECTIONS

It was hoped that in the treatment of staphycoccal infections sulfanilamide might act as well as it does in streptococcal infections, but these hopes met with disappointment. But when sulfapyridine became available, it was soon found that staphylococcal infections respond to it favorably in many cases. In furunculosis, carbuncles, staphylococcus septicaemia, acute osteomyelitis and other staphylococcal infections, a trial of sulfapyridine therapy should be made promptly, the drug being used in the same way as in the treatment of pneumococcus infections. In the treatment of staphylococcal sepsis, sulfapyridine is more effective than any other chemotherapeutic agent thus far tried.

CYSTITIS AND PYELITIS DUE TO INFECTION WITH B. COLI AND OTHER BACTERIA

Infection of the bladder and of the pelvis of the kidney will usually disappear quickly under treatment by sulfanilamide. The fluid intake should be limited to about 1500 cc. daily and 20 grains of sulfanilamide given four times daily for several days; daily cultures of the urine are made as a control. When the urinary infection is due to enterococci, it will not be cured by sulfanilamide, but may respond to mandelic acid therapy.

Patients who do not tolerate sulfanilimade well can sometimes take neoprontosil (E. W. Cook).

GAS GANGRENE

This disease, due to infection with the *Bacillus aerogenes capsulatus* of Welch, should be treated with sulfanilamide since cures have been thus effected in a number of cases (Bohlman, 1937; Kennedy, 1938); Bliss and Long strongly recommend the prompt use of prophylactic doses of sulfanilamide in all patients who have had crushing injuries to prevent the development of gas bacillus infections. For the average adult 15 grains by mouth are given every four hours throughout the day and night for preventive purposes, 60 grains of sodium bicarbonate being given daily along with it. In the treatment of war injuries, the use of sulfanilamide would probably do much to prevent complicating infections.

CONCLUSION

I have said enough, I think, to illustrate the really remarkable results that can now be obtained by means of the newer chemotherapeutic methods. Unfortunately we still have to deal with many forms of infectious disease for which as yet we have no satisfactory method of treatment. The group of diseases due to filtrable viruses still remains to be conquered. Attempts have been made to treat virus diseases (choriomeningitis, rabbit myxoma, rabbit fibroma, influenza, poliomyelitis and encephalitis) with sulfanilamide, prontosil, and sodium-sulfanilil-sulfanilate but thus far the results have not been at all encouraging (cf. McKinley, Meck and Acree, 1939). How wonderful it would be if we could discover "magic bullets" that could be shot into the body and would cure influenza, acute anterior poliomyelitis, and the several forms of acute encephalitis and encephalomyelitis. Let us hope that organic chemists, pharmacologists and investigating clinicians may before long provide us with such remedies.

The Diagnosis and Treatment of Acute Intestinal Obstruction*

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The medical profession is progressively more alert in suspecting and diagnosing acute abdominal disease. Nevertheless, the high mortality accompanying intestinal obstruction has improved very little in the last several years. In spite of advancement in diagnostic methods, surgical management, and increased understanding of altered biochemical reactions, these surgical tragedies continue. Early recognition of acute intestinal obstruction is usually not difficult, if and when its possible existence is anticipated and is given diagnostic consideration. The duration of any abdominal disease with cer-

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tain reservations furnishes the first clue to the mortality, thus indecision and delay in recognition are fundamental reasons for the persistent high mortality in acute ileus. Recognized early and judiciously treated, simple acute intestinal obstruction should carry a low mortality. Procrastination and indecision until the clinical picture is complete and the accompanying mortality climbs to 60 and 70 per cent. The outcome of each case is therefore largely in the hands of the first doctor who sees the patient. He may do most to avert disaster and it is his better understanding of the problem which will definitely reduce the present unwarranted mortality in acute intestinal obstruction.

To comprehend and be able to cope with this problem, we must consider the causes of intestinal obstruction, the effects or results of that obstruction, prophylactic measures worth considering and the treatment indicated. Acute ileus is first divided into two types, mechanical and paralytic. Under mechanical we have simple intestinal obstruction and strangulated obstruction, which is mechanical obstruction in which there is interference with the blood supply. Paralytic obstruction, on the other hand, has no mechanical hindrance to the bowel content flow, but on account of interference with the nerve supply there is inhibition to intestinal movement. The more common causes of acute ileus are adhesions, hernia, malignancy, peritonitis, intussusception, Meckel's diverticulum, volvulus, diverticulitis, congenital occlusion, spinal cord injuries, intra and extraperitoneal hemorrhage, pancreatitis, and pneumonia. Differential diagnosis between the two types may be difficult. Recognition of the types is urgent however, for while the mechanical types of ileus may demand prompt surgery, paralytic ileus is usually treated conservatively. Frequently paralytic or adynamic ileus coexists with mechanical obstruction which further confuses the problem, and adds to the gravity of the situation.

Occlusion of the intestinal tract at any point from the stomach to the anus results in intestinal obstruction. The effects of that obstruction are dependent upon the type of obstruction, the location of that obstruction, whether or not strangulation exists, and lastly the duration of the obstruction. In early simple intestinal obstruction, progressive thinning of the intestinal wall is the first pathological change, resulting from the increasing distention of the obstructed bowel segment. The bowel wall glistens and within there is increased secretion and decreased absorption, which added to the content of air, 70 per cent of which is swallowed, promotes and adds to the picture of obstruction. Unless this obstruction is relieved the peritoneal surface of the intestine becomes dull and granular. The venous blood is dammed back by pressure strangulation and the bowel color gradually changes from pink to purple, then black and finally to gray. The increased secretion has by this time accumulated a large amount of fluid in the intestinal lumen and the content is dark, malodorous and blood-tinged. The bowel wall becomes more permeable and passage of bacteria and toxic products through the sodden gut into the peritoneal cavity takes place. General peritoneal involvement ensues and takes precedence over the potential absence of the bowel lumen. Compression and twisting of nerve fibres in the mesentery at this time may result in intense shock remembering that the peritoneum is probably the most sensitive of all serous membranes. Necrosis of the intestinal wall develops and severe toxemia becomes obvious.

Formerly death was thought to be due to the toxic factor. Recently more thought has been given to the loss of essential fluids, food, and electrolytes, by vomiting, interference with absorption because of distention, and other effects on the bowel wall and its blood supply which might favor abnormal absorption. From the cardiac end of the stomach to the anus there are but two physiological closures, the pyloric spincter and the ileocecal valve. Each functions independently and differs from the other in behaviour. The pylorus relaxes and allows back flow into the stomach on the least provocation, whereas the ileocecal valve gives way to emptying of the ileum into the caecum, it acts like a check valve and does not permit regurgitation from the colon and caecum into the small bowel. The foregoing physiological entity results in prompt, frequent, quantitative, vomiting in high intestinal obstruction and frequently no vomiting in obstruction of the colon, on account of the impassable ileo-cecal valve. The higher the obstruction therefore the more serious are the immediate results. In small bowel obstruction the pylorus relaxes and there is abnormal regurgitation of the intestinal contents from the high secretory small bowel into the stomach. The higher the obstruction and the more frequent and obvious is the vomiting. Rapid decrease in chlorides takes place, with dehydration, blood hypochloremia, and alkalosis following in quick succession. The severity of this reaction depends upon the extent and duration of the obstruction and is most severe in those cases where the vomiting is excessive.

The duration and progress of the stasis have much to do with the gravity of each case and interference with absorption because of bowel distention becomes an important factor. If a simple obstruction is not

relieved, the intestine becomes more distended, the length of involved bowel becomes greater and its wall even thinner. Absorption is not only decreased but by reason of the marked intra enteric pressure the blood supply to the gut wall is hindered, petechial hemorrhages begin to appear and a simple obstruction becomes a strangulated obstruction. There is loss of blood into the segment, blood stream absorption of toxic products, impairment of vitality of the gut, and peritonitis is existent.

The signs and symptoms are again dependent upon the type, location and duration of the obstruction. The symptoms are those of a continuous process which is rapid, destructive and merciless. When the continuity of the intestinal tract is interfered with the first symptom is pain, intermittent and colicky. The patient often speaks of it as gas pain. These pains, which rapidly become more intense, are characteristic. They are intermittent and cramping, first mild and becoming more frequent and more intense. They are waxing and waning, have a long crescendo, a brief top, and a gradual drop with recession. Borborygmus heard at the acme of this intermittent pain is denotative of obstructive colic, dynamic in type. The patient is wide awake, alert and apprehensive but the pulse rate, temperature and respiration, the blood pressure and blood count, show no deviation from normal. Between pains the abdomen is soft and not tender unless an adhesive band is attached to the parietal peritoneum. Soon nausea and vomiting accompany the intermittent pains as relaxation of the pylorus permits emptying of the small bowel back into the stomach. Early simple obstruction gives no local signs and few symptoms. Pain, nausea and vomiting, with abdominal distention usually are the only ones necessary. Obstipation is a valuable symptom and enema information is not always reliable.

The only types of obstruction in which there is no vomiting but great distention is obstruction of the colon. Here distention may go on to extreme, with visible peristalsis and perforation before vomiting becomes a complaint.

When obstructive symtoms appear the first twenty-four or forty-eight hours following surgery, paralytic ileus is the usual cause. Here the pain is continuous, dull, and boreing, instead of recurrent colicky in type. The patient does not appear as ill, distention is rapid, progressive, and soon associated with nausea and vomiting. On auscultation the silent abdomen is pathognomonic, the only sound heard being the mechanical tinkle present just before silence is complete.

Not recognized early while only simple mechanical obstruction exists the succeeding signs and symptoms are based on the pathological changes described. The loss of fluids by vomiting results in dehydration, rising temperature, leucocytosis, blood concentration and loss of electrolytes. The loss of fluid from the tissues into the obstructed bowel segment is followed by weeping of this obstructed gut into the peritoneal cavity. The peritoneum being the most sensitive of all serous membranes general abdominal pain, tenderness and shock now become apparent.

Unless there is prompt relief this mechanical obstructive process now decreases the vitality of the gut, which is the chief lethal factor in simple obstruction. The blood supply to the segment is strangulated and the pain becomes more severe, generalized, and continuous. Tenderness is pronounced, gangrene begins, and with gangrene borborygmus ceases and peritonitis takes precedence over obstruction. Visible peristalsis so frequently spoken of, still is not observed unless the patient is a child or the adult has a very thin abdominal wall. These last signs and symptoms are not the signs of intestinal obstruction to be sought but the manifest stigmata of impending dissolution.

The urgency of keeping intestinal obstruction in mind can hardly be exaggerated, for by so doing prompt diagnosis is made and adequate treatment instituted. The presence of abdominal pain, obstipation and nausea should arouse one's suspicions. When seen in infants intussusception is the most common cause. Seen early the bloody mucous stools and a palpable mass in an otherwise soft, non-tender abdomen clarify the diagnosis. Rotation anomalies and mesenteric fixation make their appearance in older children. At this age Meckel's diverticulum is a frequent cause. Blood in the stools and a history simulating peptic ulcer will help substantiate the diagnosis. In young adults we suspect hernia and post-operative adhesions, less frequently tuberculor peritonitis and benign tumors. Malignancies occur more often during middle age and volvulus and foreign bodies are added to the possibilities. In later life malignancies, impactions and vascular occlusions become more common causes of obstruction.

No morphine should be given which only masks the picture, and the temptation to order a barium meal should be avoided. Too frequently barium given as a diagnostic aid completes an incomplete obstruction, adding insult to injury.

Is the obstruction dynamic or paralytic? Differentiation is mandatory as the treatment in one may be contraindicated in the other. In adynamic ileus there are no recurrent colicky pains, but the pain is contin-

uous, dull, and boreing. Distention is usual and vomiting may be almost continuous as a result of the relaxed pyloric sphincter. There may even be reverse peristalsis. A silent abdomen stands out as differentiating adynamic from mechanical ileus. Paralytic ileus coexisting with mechanical obstruction may be confusing.

Accurate localization of the obstructing factor is of diagnostic and therapeutic value. Is the obstruction in the small bowel or large? Is the obstruction of the high secretory gut or of the low absorptive area? Is it complete or incomplete?

The stomach tube will eliminate the pylorus. Enemata, though successful, are not always helpful unless incomplete obstruction is relieved by the expulsion of flatus and feces, and the symptoms subside. After enemata, rectal examination and proctoscopic investigation will rule out the rectum and sigmoid. All hernia sites should be examined, not overlooking Richter's hernia and remembering that obturator hernias do occur. The ileum is the most common site of involvement and therefore the lower right quadrant should be looked upon as a location of adhesions and obstruction probabilities.

Probably the greatest single help is the x-ray. A scout film taken with the patient supine will indicate the grade as well as the location of the obstruction, and the characteristic herringbone pattern will substantiate the diagnosis. When there is no distention, the presence of gas in the small bowel, which is not normal, will be helpful, while distention of the left half of the colon turns one's attention to the sigmoid and eliminates the small bowel. The patient's condition permitting, roentgenograms in the vertical and lateral positions may show fluid levels of diagnostic value.

Early post-operative ileus may be due to fibrinous exudate. Finally, differential diagnosis is not completed unless the possibilities of lead colic, syphilitic crisis and herpes zoster have been considered. Reflex distention, associated with renal colic and central nervous system lesions, are likewise eliminated before one is sure of the diagnosis.

Treatment cannot be discussed without mentioning prophylaxis. The degree of ileus which develops post-operatively is generally speaking proportional to the exposure, the trauma, and manipulation, during the operation. Gentleness in handling tissues, meticulous haemostasis and exact technique will go far to prevent ileus. There should of course be no pre-operative catharsis.

Treatment of early acute mechanical obstruction should be eradication of the obstructing mechanism and decompression of the distended bowel. The wisdom of immediate operation in early mechanical obstruction is still not a settled question. The aphorism, "the longer a patient with intestinal obstruction lives before operation, the sooner he dies after it," is no longer well grounded. However, when acute mechanical obstruction is recognized early, immediate surgical intervention is the one means of reducing the present mortality of 40 to 60 per cent. Having removed the obstructor, decompression of the distended bowel through the Wangensteen suction duodenal tube is the most valuable addition to the treatment. Intravenous saline solutions with glucose added should be given, which overcomes dehydration and the loss of electrolytes. The glucose should be buffered by insulin as glucose not buffered by insulin inhibits peristalsis.

Blood transfusions, both before and after surgery, are of course superior to other intravenous therapy. Heat applied to the abdomen through a lighted cradle or diathermy adds comfort and promotes subsidence of the distention. Morphine, which we now know is an intestinal stimulant, should be given in adequate amount. The wisdom of using pitressin, prostigmin, choline, and similar drugs is questionable and is an individual problem.

Strangulated intestinal obstruction must be operated without delay. The procedure is hazardous and the outcome questionable, and all resources of surgical care and skill are required. Replacement of lost fluids, insurance of an empty stomach, maintenance of the blood pressure and the minimal exposure of the viscera are all essential to success.

Early paralytic ileus is indication for treatment by the Wangensteen trans-nasal duodenal tube which quickens the decompression of the distended bowel and makes certain an empty stomach. Morphine in sufficient amount, intravenous saline solution, and the application of heat will result in recovery in most instances. Generally speaking, the less surgery done the better the results are likely to be. However, an occasional enterostomy is necessary, in which case the Witzel technique is the procedure of choice.

When mechanical obstruction is not recognized until there is damage to the bowel wall it should be treated conservatively. Surgery is injudicious and decompression wise. The Wangensteen suction tube may result in decompression, while again enterostomy may become necessary. When enterostomy is done the first loop of bowel delivered is usually made use of, but if possible the enterostomy should be placed just above the obstruction. Generally speaking, the less surgery done the better the prognosis. Resections and immediate anastamoses are spectacular but carry the highest mortality.

If the obstruction is in the colon or sigmoid, caecostomy is frequently preferable. It permits decompression of the distended colon independent of the ileo-caecal valve and allows the large bowel to return to normal before further operative procedures are carried out. Single stage resections are still done but less frequently. Decompression, permitting subsidence of the inflammatory reaction and thorough cleansing by irrigation prepares the patient for further surgery and reduces the mortality. As John Deaver said, "It is better to perform two operations and look forward to a living patient than one operation and a dead patient."

The gravity of acute intestinal obstruction is appreciated when one investigates the incidence and mortality. Hours of delay in obtaining medical attention and diagnostic deliberation are potent factors in the mortality. Early surgical intervention which removes the obstructing factor and decompression of the distended bowel are the essentials in treating mechanical ileus. The surgical treatment of paralytic ileus is debatable. The Wangensteen trans-nasal suction apparatus is probably the greatest single advance in therapy in recent years. The Witzel type of enterostomy is the most conservative type and the method of choice in most instances. The use of drugs, other than morphine, have not proven entirely satisfactory, though miraculous results have been reported. Prompt attention, early accurate diagnosis and judicious treatment of the individual as well as the obstruction are followed by the best results.

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Technique of Refraction*

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ENID, OKLA.

In the presentation of this subject, I have tried to avoid the orthodox instruction as can be obtained from any text book and confine my remarks to points that I think have been of greater help to me and produced better satisfied patients.

Since the greater part of the revenue, accruing to the E. E. N. & T. man, is derived from the fitting of glasses, it is surprising to note that the technique of refraction so seldom receives any attention. One would think after looking over the program offered by our sections in the various societies that this subject was either so trivial as to de-

*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, May 3, 1939, Oklahoma City.

mand no consideration or so thoroughly understood and so completely developed as to leave nothing whatever to be added. So far as I know I have nothing new to offer. I have chosen this subject for discussion with one purpose in mind; namely, that it may provoke some debate on methods of technique whereby each of us may learn some few points that will enable us to furnish a better service to our patients with a consequent greater satisfaction for ourselves.

To my mind, completely performed refraction cannot be done in five or ten minutes. The man who boasts of being able to complete a refraction in ten minutes is just about forty minutes better than I am. The fitting of glasses as carried out in my office is divided into the following steps:

First. History of the complaint that has brought the patient to the office.

Second. The objective examination of the eyelids and eyeball with palpation of the eyeball.

Third. Recording of the vision before anything is done.

Fourth. Retinoscopg with recording of the results.

Fifth. Cycloplegic in most all patients who have not lost their accommodation with the retest after fifty minutes has elapsed.

Sixth. Allowances made for age, vocation and myopes.

Seventh. Frame fitting and measurements.

Eighth. Lenses, bifocals, kind, size, shape, colored or not.

Ninth. Fundus examination.

We shall now discuss in brief detail some of the points we deem pertinent to enable us to properly evaluate and supply the correct refraction.

First. In taking the history of a patient relative to his eye complaints, I want to know: When do your eyes trouble you? To this, he will answer that he gets up with a headache in the morning—or he always has headaches after an hour's ride in a car—or attendance at a movie always results in a headache—or that his headache begins at 9 or 10 o'clock, as soon as he is up awhile. The interpretation of the above answers are that the headache that he awakens with is not from the eyes while the others are. My next question is: In what way do your eyes bother you? To this he replies that he has blurriness on reading, headache, redness and gets sleepy. Which to me points definitely to an error in refraction, as the most logical cause of the symptoms, and most likely to be astigmatic or hyperoptic, though in a few cases a myope will be found to have annoying eye symptoms.

Second. In making the objective examination of the eyes, the lids and globe should never be overlooked. Palpation will reveal the necessity or not of using the tonometer. Granules of the lids, obliteration of lid structure, concretion in the tubular glands, blepharitis and pterygia and any gross pathology of iris or cornea can be quickly eliminated or discovered. We must in every case know the presence or absence of the aforenamed to enable us to properly proceed to an intelligent refraction and further treatment.

Third. The vision should always be taken and recorded before examination for refraction or any medication is done. The amount of vision usually proves a more or less helpful guide in the refraction and always forestalls the cycloplegic from being responsible for a blind eye the patient may have been ignorant of possessing.

Fourth. This step is retinoscopy in every case. (I use a Copeland Streak) I have been using one for the past three years and am more enthusiastic as to its value both as to its accuracy and time-saving advantage, than any thing I have in the office. In my hands it is absolutely accurate and scientific. In the higher refraction errors, one spots them immediately and can proceed with confidence that he is right. Astigmatism is readily recognized, its axis positively and quickly recognized and the strength of the cylinder easily measured. If you have tried this instrument and don't like it, go to it and at it again, and reserve your judgment until you have used it six months on every refraction and then if you don't like it, throw it away, for there is something the matter with the instrument. Not any of us mastered the trial case in six months, so why should we expect to become proficient with a brand new instrument in a week.

The result of the retinoscopy is recorded and as stated above in nearly every case under 40 a cycloplegic is used. After accommodation is allayed the retinoscopy is repeated, recorded and the trial case is called upon to confirm the results.

This is the usual finding at the trial case. Either a quarter sphere is added or subtracted from the retinoscopy finding to improve acuity with the cylinder being absolutely right. I am very reluctant to make any changes in the cylindrical finding of the retinoscope. I always fit the full amount of cylindrical error found.

My experience has been that old people and some not so old are so anxious that in the cases of lessened acuity they are undecided many times to one-half or three-quarters of a dioptre of what they need. It's nice to tell 'em. In children of pre-school age and even up to the third and fourth grades, one must be very cautious in accepting their judgment at the trial case.

Fifth. As a cycloplegic, I have used Homatroin powder, (100 per cent) for years. I put it in the eye with a small spatula. Lifting the upper lid away from the eye and instructing the patient to look downward, I deposit a wee bit on the under outer portion of the lid. This is repeated in five minutes, then in five more minutes installation of one drop of paredrine hydrobromide is made into each eye and when accommodation is allayed (about 50 minutes) the refraction is completed.

Sixth. After positive measurement of the amount of refraction has been determined, it is now a matter of judgment just how nearly complete the prescription should satisfy the findings. This is dependent upon the age of the patient, the difference in the pre- and post-refractive findings (from installation of cycloplegic) the eye-symptoms that caused the patient to seek relief, the temperament, vocation and the use to which glasses will be subjected.

Much detail could be given the preceding paragraph. I will briefly call attention to the age; most young patients will wear glasses, if not over corrected with no complaint and complete comfort and relief. I inform, when I am through with the examination, to the beginning presbyopes that they are buying themselves a great big bundle of troubles. Then explain to them the way to use the glasses to help them accustom themselves to the blurriness they will see when looking through the segs etc. I have very little trouble except with a small number, who return complaining that upon reading they get sleepy and their eyes tire and they have to stop reading. They are resold and a pair of treatment glasses or base or prisms are given to use daily for a few days and everything is all right. At least for a while.

The "Temperment" all of us either enjoy trying to "out Tact" or become disgusted. The latter attitude does not solve the situation.

Vocation and use should receive very particular consideration, for upon the true evaluation of the necessities in each particular case, depend the position, and size of bifocals and to a large extent the kind and style of frame.

Seventh. Frame fitting and measurement is a very important part in delivering a comfortable feeling and looking pair of glasses. One should have some definite ideas of where the top of the lenses should be, its relative position and shape in reference to the eyebrow, its distance from the side of the nose, the distance from the eyeball, length of nose, shape of face and most important of all the pupillary distance and see that bifocals are placed as should be to comply with it. All these facts should be taken into consideration together with the proper pad and temple adjustment to produce the results to satisfy all. I never leave this to the optical house. It's okay if you want to risk it, but they don't get the job done in many cases.

Eighth. I universally use clear lenses except when there is a definite indication either in the vocation or history that causes me to modify such a choice. No optical salesman has yet appeared that has demonstrated to my satisfaction the scientific, visual wearing merits of colored lenses. That Ray-Ban and Calabar, in the darker shades, as an extra pair of glasses or snap-on front are both comfortable and sensible as well as necessary to many wearers I am thoroughly convinced. Proof that they afford comfort to many eyes is undeniable. That there is any place for the light shades in colored glasses save to satisfy some folk's peculiar appreciation for the beautiful, and secondly to permit the optical houses to exploit our patients. I am positively convinced.

Bifocals to give the greatest reading and wearing comfort for the ordinary person should be made small and placed high. Never under any circumstances change the height of a bifocal seg unless the wearer is dissatisfied with its present position.

In fitting bifocals where the cylinder is oblique or horizontal, combined with an unequal amount of strength in the two eyes, consideration of this point must never be overlooked, for compensation for this difference in the addition of the necessary prism to the seg is the difference between comfortable and uncomfortable glasses. Don't get over-enthusiastic along this line. The needs for such corrections are few.

Ninth. The fundus examinations is done at this time because in every case where a cycloplegic is used the patient has a wide open pupil. If the opthalmoscope is used before the refraction is made many patients complain that the spot that is before their eyes interferes with seeing.

Van Meter Prize Again Offered

The American Association for the Study of Goiter again offers the Van Meter Prize Award of three hundred dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association which will be held at Rochester, Minn., on April 15, 16 and 17, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a typewritten double spaced copy sent to the Corresponding Secretary, Dr. W. Blair Mosser, 133 Biddle Street, Kane, Pennsylvania, not later than March 15.

A place will be reserved on the program of the annual meeting for presentation of the prize award essay by the author if it is possible for him to attend.

EDITORIALS

MEDICINE AND DEMOCRACY

Hippocrates, the father of medicine in the 5th century B. C., gave us the first declaration of independence. Under the stimulus of Socrates' straight thinking and analytical methods applied to the individual problems of his contemporaries, Hippocrates broke away from the restrictive domination of the Church, the folly of magic and the false premises of philosophy, and in a thoroughly democratic spirit he embarked upon the relentless pursuit of truth.

For the purpose of recording, safeguarding and perpetuating these democratic principles in medicine, the Hippocratic Oath was evolved. It embodied a passion for personal freedom, a plea for justice, a devotion to truth and a spirit of brotherhood which marked a high point in the history of civilization.

True democracy strives to preserve the individual dignity of man and to create an environment which provides equality of privilege, independence of thought, the power of initiative, freedom of action and facilities for sound education, all of which are attributes of true security. True democracy represents a quest for the enduring satisfactions of life. In the last analysis, it is a sustained search for truth. Obviously truth comes only through freedom of thought and action.

American democracy represents an escape from our slavery to Europe. The freedom we gained was, in principle, much like that achieved for medicine when Hippocrates broke with magic, philosophy and the Church.

If the inviolable principle of democracy, which is the dignity of man, is to endure, the freedom of medicine must be preserved. Our forefathers fought for the freedom of democracy. Too long we have rested in their glory and enjoyed the fruits of their heroic efforts with little thought of the future. Though the spirit of eternal youth and vigor is inherent in democracy, it may become pallid and powerless through indifference and neglect.

Democracy is safeguarded through sound education. In this day of paternalism and socialistic trends in government, we should make use of every opportunity to disseminate knowledge which may help preserve individual freedom. If all the people knew the truth about medicine and democracy, there would be little danger of socialized medicine in any form. If only the members of the legislative and administrative branches of our government knew more about medicine, they might be hounding the medical profession about the sins of commission rather than omission. Instead, they face the embarrassment of a strange paradox. Through the stimulus of defective surveys and lay enthusiasts, with more zeal than knowledge, they allege that a large percentage of our people are suffering for want of adequate medical care and that a correction of this deficiency would solve many social, economic and physical ills. If this were true, the paradox would still stare us in the face. We would continue to have two problem age groups which are largely the result of good medical care.

In truth, the people of the United States now have the most efficient, comprehensive medical service in the history of the world. In the past quarter of a century, the average expectancy of life has moved up from 48 to 61 years. This increase has been accomplished through medicine and surgery and the medical control of environment, including sanitary engineering. For the benefit of those who doubt, we have only to mention the control of tuberculosis, typhoid fever, diphtheria, infant diorrhea, scarlet fever, diabetes, etc. Surgery also has effected a great reduction in mortality. Under modern living conditions, large cities could not exist without preventive medicine and sanitary engineering. Certainly medicine under bureaucratic control, with double the cost, could do no better.

It behooves the citizens of this democracy, and particularly our legislative and administrative bodies, to look far below the crust of the critical present; to take stock of the past and to carefully consider the future. We must not insult the dignity of man by sacrificing any part of our cherished democracy.

Again referring to the paradox, it may be said that prominent among the inherent dangers of democracy are the problems of two age groups. First, there is always the hazard of an impulsive, improperly educated, antagonistic youth group; and, second, there is the growing burden of an old age group. Daily it becomes more obvious that these groups are among the serious problems of our own country.

The medical service now available is largely responsible for the present magnitude of these two problems. The saving of life in infancy and the fostering of health in childhood and adolescence have produced a vigorous youth. The continued protection of good medical care has increased the span of life to the point of pyramiding, what promises to be, an unhappy old age.

In the light of available knowledge, it would be well if politicians devoted their energies toward the solution of these rather serious problems which good medical care has helped to create, rather than apply undemocratic regimentation to members of the medical profession and millions of citizens who would suffer a corresponding limitation of personal freedom. If the plans of the politicians worked, they would further cripple democracy by piling up trouble in these two groups. Constructive gainful employment with remuneration which could be received with dignity, is what both age groups are in need of, and, most of all, this is what our democracy requires. Our people are clamoring for honorable bread and butter, and not for better medical care. There is no point in a blanket rule of retirement from manual labor or intellectual pursuits at 60 or 65 years of age. The youth problem is now being aggravated by the anticipation of taxes for the maintenance of the aged.

There is great danger of mistaking the burdens of social, economic, industrial and mechanistic development for the burdens of disease. The latter have been largely lifted from the shoulders of society, while with shifting emphasis upon the manner of living, with increasing aloofness from the soil, and the dominant note of mechanistic science, the evils of our progress keep pace with, and adversely influence, the benefits.

Government medicine under bureaucratic control would not improve the general tone of medical care, but it would be a serious blow to democracy, and it would waste large sums of money which might be employed toward the solution of the age group problems.

If the government desires to alleviate suffering and save life, it might undertake the control of some of the physical forces which exercise their anulling and killing power through the science which speeds up our mechanistic progress. For example, a great reduction in morbidity and mortality could be achieved through the improvement and widening of highways, the employment of safety devices and the careful determination of mental and physical fitness of drivers. In the broad field of industry there are many similar opportunities which do not fall in the domain of medicine.

But it must not be forgotten that medicine has bravely met the challenge of this high-geared mechanistic progress. The development in orthopedic and brain surgery has been phenomenal. This again reveals medicine's alert response to new demands with surprising ingenuity and adaptability.

The few facts presented above are sufficient to indicate that medicine is keeping abreast with other lines of social endeavor. If our democracy really wants good medical care, would it not be wise to let the medical profession carry on as it has in the past?

Referring directly to the alleged need, it may be said that the members of the medical profession have served the poor for a period of 2500 years. They are willing to continue this contribution to society. This is made manifest by the numerous voluntary organizations recently developed within the medical profession for the purpose of giving medical service in an organized way and in keeping with present trends. Let local needs be determined by local agencies and met by the members of the local medical profession. If Federal aid is necessary, let it be allocated according to the estimated need and locally administered. Medicine adheres to the democratic belief that charity begins at home and should remain at home.

Finally, if legislators and government administrators were required to spend six to eight years in a school for the study of democratic government, and if they looked upon the constitution of the United States and the Bill of Rights as medicine looks upon the Oath of Hippocrates, they would know that any radical change in the present type of medical service would be undemocratic and would threaten the very foundation of our traditional freedom.

But we should not expect perfection, we are "born to trouble," and must learn to take it. Keats once said: "A man should have the fine point of his soul taken off, to be fit for this world." Since we must share the faults of our day, we should strive to live in harmony with each other and to make the world as guiltless as possible. With this in view, medicine is seeking a more enlightened judgment as to what constitutes adequate medical service and how it may be extended without seriously disturbing the dignity of mankind.—L. J. Moorman.

MEMBERSHIP

In Oklahoma there are five hundred physicians who are not members of the State Association but should join.

The dues have been reduced by the House of Delegates to $10.00 and for this investment each member receives very valuable returns.

First: With State Membership goes membership in the American Medical Association, although the A. M. A. receives no part of the dues. If fellowship in the A. M. A. is desired, the physician must subscribe for the Journal of the A. M. A. and with this subscription goes all the privileges of the Association—and without doubt the A. M. A. is entitled to this support by every practicing physician.

Second: Unless membership in the State Association is secured by an individual physician he is not carrying his share of the load. He is obtaining the benefits of the work done by the organization with no effort on his part, not even any degree of cooperation.

Third: He is missing, if not a member, one of the real joys of his profession. Fellowship—The mutual interests of physicians makes this fellowship a factor in the solution of our daily problems, and these problems grow more complex during the changing times. How can a physician live without it?

Fourth: The science of medicine is constantly and rapidly progressing and in the County and State Society meetings discussion of timely subjects is encouraged, helping in a very definite way to keep the physician abreast of the times.

Fifth: Membership adds dignity to the standing of a physician. We know that prestige is gained as is indicated by the fact that it is usually a part of the qualification of the expert witness in Court and is usually required of physicians doing work for Insurance Companies, either in the treatment of insurance covered cases or in the making of life insurance examinations.

Sixth: There are grave economic problems to be solved and the profession as well as the laity are entitled to the counsel of each physician in this solution.

Seventh: Join your County Society so that we may present a united front as we go before our people with our views relative to the solution of the problems now presenting. Much more good can be accomplished when we have the 2,000 members which we should have during this year.

If our membership reaches 1,551 by April first, we will have three delegates to the A. M. A. Everybody please make an honest effort to reach this goal—County Secretaries take notice.

Venereal Disease Control Standards

Standards with which states using federal funds for venereal disease control have been asked to comply beginning January 1 were recently announced by the U. S. Public Health Service.

Seven general provisions were listed as follows:

1. State and local laboratories receiving funds shall demonstrate that serologic tests for syphilis performed by them have a satisfactory sensitivity and specificity rating.

2. Laboratories receiving federal money shall provide services for venereal diseases on the same basis as for other communicable diseases.

3. Health departments and clinics receiving funds shall provide free diagnostic and treatment facilities for (a) the diagnosis and emergency treatment of all patients who apply; (b) all patients referred to a private physician either for continued treatment or for consultative advice and opinion; (c) all patients unable to afford private medical care.

4. All antisyphilitic drugs shall be distributed free on request to all licensed physicians.

5. Diagnostic and treatment facilities shall be available to all persons whether from the particular state or some other location.

6. Properly qualified full time venereal disease control officers shall be employed by the state department of health and all municipalities receiving funds.

7. State health officers shall give due consideration to the relatively higher prevalence of syphilis in urban areas.

These standards constitute the framework around which it is hoped that the complete program will be developed, according to a statement from the surgeon general. He pointed out, however, that the money appropriated by the federal, state and local governments plus the funds made available by various philanthropic and other agencies does not yet approximate the estimates considered necessary for an effective campaign against the venereal diseases.

Report Cobra Venom For Arthritis Relief

Cobra venom offers possibilities of proving of value for the relief of pain from neuralgia, arthritis and related disorders, Otto Steinbrocker, M.D., George C. McEachern, M.D., Emanuel P. LaMotta, M.D., and Freeman Brooks, M.D., New York, reveal in The Journal of the American Medical Association for January 27 in a report that 39.01 per cent of sixty-one patients in whom they injected venom were slightly or moderately benefitted.

The results from injections of cobra venom are compared by the investigators with those obtained from injections of saline salty solution in thirty-six patients also suffering from arthritic disorders, only seven of whom experienced any benefit.

"Accurate determination of such treatment value requires further controlled investigation in a large series of the various rheumatic conditions," the authors caution.

Further discussing the results, they say: "The good effects of the snake extract were in no instance apparent before at least five injections (given from two to five a week) had been administered, and usually from eight to ten treatments were required before any benefit was admitted or noticed. The venom cannot be substituted for the predictable, rapid pain-relieving effect of a narcotic, nor does it seem to act uniformly as to degree and time in approximately similar involvement."

Hemorrhage Control Vitamin Reported

The control of hemorrhage in ten patients suffering from a deficiency of prothrombin, the blood clotting factor, by administration of a synthetic vitamin K is reported by Jonathan E. Rhoads, M.D., and Maurice T. Fliegelman, M.D., Philadelphia, in a recent issue of the Journal of the American Medical Association.

The vitamin K substitute used is known at present only by its chemical name of 2-methyl-1. 4-naphthoquinone. The results obtained by the Philadelphia men, they say, seem to confirm the high potency demonstrated for this compound in investigations on chicks.

Three of the patients in whom a satisfactory response was obtained had failed to respond satisfactorily to various forms of vitamin K. In six cases the clotting time returned to normal within twenty-four hours or less after the initial dose of the substitute.

• THE PRESIDENT'S PAGE •

On January 31, 431 of last year's members of the Oklahoma State Medical Association had renewed their membership for 1940, and had thus reaffirmed their faith in the principles and ideals of not only their state medical Association, but in the principles and ideals of American Medicine.

This is indeed a fitting tribute to the past officers of the Association who have since statehood maintained through their leadership an Association that has merited and received the support of the progressive doctors of Oklahoma.

Membership alone is not enough, but more especially in these times of changing economic and scientific conditions it should be the self-assumed duty of every doctor of Oklahoma to place his shoulder to the wheel of progress and give to his community the benefits of organized medicine.

Nineteen hundred and forty finds your Association sponsoring two Post-Graduate courses, the ultimate value of which cannot at this time be estimated. The Post-Graduate Course in Cancer is well under way, and the Post-Graduate Course in Pediatrics began the 19th of this month. This is progressive medicine; subscribe to it, encourage it, and above all, use it.

W. D. Howard

President.

COUNTY SOCIETIES . . . NEWS NOTES

Enthusiastic Response Marks Progress of Cancer Program

Drawing enthusiastic response from the lay public as well as physicians, the statewide Post-Graduate course in Cancer made its debut early this month in northeast Oklahoma, with Dr. J. Samuel Binkley winning acclaim from his audiences with his instructive lectures.

Despite inclement weather that accompanied the opening of the two-month program, satisfactory crowds convened to hear the New York cancer authority discuss the necessity for and the scientific angles of the control of cancer.

Doctor Binkley, beginning his series of lectures in Miami, and proceeding the first week to Vinita, Claremore, Bartlesville and Tulsa, is being accompanied by Mr. E. C. Stoy of the State Health Department, who is operating his movie equipment, slides and other equipment.

Besides the afternoon lay lectures and his talks before the county medical societies in every center, Doctor Binkley has been scheduled in numerous instances for clinics of instructive value to the doctors, and for talks before civic clubs, Chambers of Commerce, schools and other bodies. Because of the interest in the advancement of and research in cancer control, the course is receiving prominent statewide publicity, through newspapers, radio and by word of mouth.

Advance information as to program plans outlined by local county medical societies and the Women's Field Army representatives working with them is desired by the office of the Cancer Committee of the Oklahoma State Medical Association, 210 Plaza Court, Oklahoma City. Cancer Committees of those county medical societies who have not already sent in this information as to the time and hour of the lay and medical meetings in their respective centers are respectfully requested to do so as soon as possible.

Representing the state at the national public health meeting in Atlanta, Georgia, February 13 and 14 were Dr. Grady F. Mathews, Oklahoma State Health Commissioner, Dr. Vance Morgan of Oklahoma City, Dr. E. A. Gillis and Dr. David V. Hudson, Tulsa.

Students in the Perry schools this month are receiving the benefits of a general health clinic conducted by members of the Noble County Medical Association under the sponsorship of the city's Parent-Teacher Association. The clinic affects all school children from the first grade through the high school classes.

Medical Defense Fund Rules

At the recent meeting of the Council of the Oklahoma State Medical Association, it was voted unanimously by the Councilors present to amend Rule 3 of the rules governing the Medical Defense Fund. This rule which read

"A member is not subject to coverage if he carries other liability insurance."

now reads

"All members in good standing of the Oklahoma State Medical Association shall be eligible for participation in the Medical Defense Fund of the Association."

Kay County Group Host to Doctors

Physicians and surgeons of Garfield, Grant, Kay, Noble, Osage and Pawnee County Medical Societies convened in Ponca City January 25 for the quarterly meeting of the Northern Oklahoma County Society. Dr. George Niemann and Dr. R. G. Obermiller of the Kay County group were in charge of arrangements.

Speakers on the afternoon program included Dr. Coyne H. Campbell, Dr. LeRoy D. Long and Dr. Henry H. Turner of Oklahoma City, Dr. Hays R. Yandell of Ponca City, and Dr. Charles Sherwin of St. Louis University. Dr. Sherwin and Dr. A. S. Risser of Blackwell were speakers at the dinner in the evening.

First Texas Chemical Company Names Officers

At the annual meeting of the stockholders of the First Texas Chemical Manufacturing Company held in their Dallas office January 13, the following stockholders were elected directors for the ensuing year: J. S. Kenne, George Miller, L. N. Hays, B. B. Johnston, and F. O. Burns.

Following the stockholders' meeting, the directors named as officers for this year the following: J. S. Keene, president and general manager; B. B. Johnston, vice-president; V. M. Payne, vice president; F. O. Burns, secretary-treasurer.

The company's sales for 1939 were the largest in its history. The program for the future includes the addition of two stories to the present plant, the expenditure of a $25,000 budget for advertising new products, and extension of trade territory.

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CONCERN over the complications of measles may be greatly lessened by the use of Immune Globulin (Human). When the complications of this disease, especially bronchopneumonia, are removed, measles is reduced to the level of a mildly inconvenient episode in the child's life. A single injection of Immune Globulin will generally produce a modified measles which is not apt to be followed by complications. The injection should be given a few days after intimate exposure to the infection.

For a child of two years or less, inject 2 cc.; for older children add 0.25 cc. for each year above the age of two to a maximum of 4 cc.

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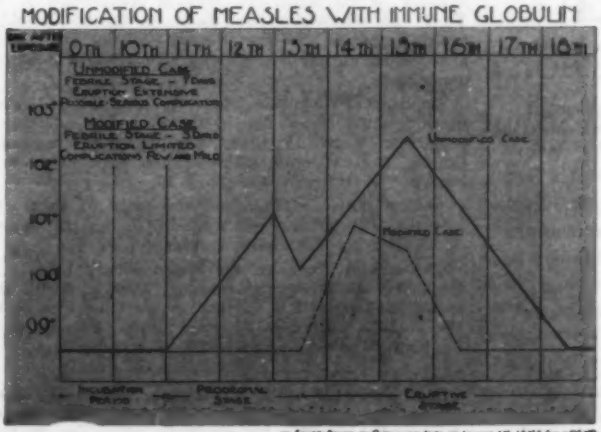

At the regular monthly meeting of the Carter County Medical Society January 29 in Ardmore, Dr. G. E. Johnson, Ardmore, discussed "The Chronic Prostate," and Dr. W. D. Blassingame talked on "Diarrhea in Infants." Applications for membership were received from Dr. James Smith and Dr. William A. Loy, both of Ardmore.

Dr. P. B. Rice of Antlers has been appointed a resident physician by the United States Indian Service, the appointment becoming effective on January 1. Service to the Indians will be broadened when a nurse is assigned to his office, a step expected to be made soon.

His activities in civic work were recognized this past month when Dr. Merl Clift, Blackwell physician and surgeon, was elected president of the Blackwell Chamber of Commerce. Dr. Clift is the president of the Kay County Medical Society for 1940.

Dr. Paul Gallaher of Shawnee, accompanied by Mrs. Gallaher, attended the sectional meeting of the American College of Surgeons, January 17 to 19, in New Orleans, La.

Active duty in the navy's new medical aviation corps has been ordered for Dr. R. B. Ford of Tulsa. Doctor Ford will serve one month at Pensacola, Fla., where the navy is training reserve pilots.

Twenty doctors were present at installation services for newly elected officers of the Hughes County Medical Society at the January meeting in Holdenville. Dr. Henry H. Turner and Dr. Onis G. Hazel of Oklahoma City were principal speakers on the program.

A proposed $38,000 bond issue for a county hospital brought to a vote in mid-January, was rejected by Nowata county voters. The proposal lacked five votes of obtaining the necessary 60 per cent of all votes cast.

A luncheon at the Judkin-Forbes hotel in Poteau preceded the January business meeting of the Women's Auxiliary of the LeFlore County Medical Society. The members met as the guests of Mrs. S. D. Bevill. As features of the program, Mrs. W. L. Shippey and Mrs. Earl Woodson read papers from Hygeia magazine.

At a recent meeting of the Bryan County Medical Society, a resolution was passed providing for the society to cooperate with the establishment of a free venereal disease clinic in Bryan County. The clinic is under the auspices of the State Health Department and directed by Dr. W. W. Mead of health unit No. 5, which is now operating in Bryan county schools in prevention and control of communicable diseases.

Honoring Dr. Tom Lowry, newly elected president of the Oklahoma County Medical Society, members entertained with a dinner-dance January 20 at the Oklahoma City Golf and Country Club.

Dr. R. H. Sherrill was elected leading citizen of Broken Bow by a large majority of votes in a contest sponsored in that city by the Boy Scouts.

Dr. D. C. McCalib, physician at Ringling for the past three years, moved in late January to Colbert, where he will continue his practice.

At the January meeting of the Garfield County Medical Society in Enid, two Tulsa physicians appeared as featured speakers on the program. Dr. W. J. Trainor spoke on diagnosis of heart conditions by x-ray, and Dr. Fred E. Woodson presented a paper on "Selection of an Anaesthetic for the Cardiac Patient." Dr. W. P. Neilson, presiding at his first meeting as president, announced his committee appointments.

Dr. William D. Haggard, 67, Nashville, Tenn., past president of the American Medical Association and the American College of Surgeons, died of a heart ailment in Palm Beach, Fla., January 28. The surgeon's fatal illness occurred during his sleep in a hotel.

The Psychological Aspects of Cod Liver Oil Administration

Some authorities recommend that cod liver oil be given in the morning and at bedtime when the stomach is empty, while others prefer to give it after meals in order not to retard gastric secretion. If the mother will place the very young baby on her lap and hold the child's mouth open by gently pressing the cheeks together between her thumb and fingers while she administers the oil, all of it will be taken. The infant soon becomes accustomed to taking the oil without having its mouth held open. It is most important that the mother administer the oil in a matter-of-fact manner, without apology or expression of sympathy.

If given cold, cod liver oil has little taste, for the cold tends to paralyze momentarily the gustatory nerves. As any "taste" is largely a metallic one from the silver or silverplated spoon (particularly if the plating is worn), a glass spoon has an advantage.

On account of its higher potency in Vitamins A and D, Mead's Cod Liver Oil Fortified with Percomorph Liver Oil may be given in one-third the ordinary cod liver oil dosage, and is particularly desirable in cases of fat tolerance.

Oklahoma City Internists Elect Officers

Dr. Arthur W. White was elected chairman of the Oklahoma City Internists' Association at a meeting held January 20. Named to the position of secretary-treasurer was Dr. Elmer Musick.

The Oklahoma City internists are sponsoring the second annual Washington Birthday Medical Clinics February 22 at University Hospital in Oklahoma City.

Obstetrics Examination Date Changed

The general oral and pathological examinations (Part II) of the American Board of Obstetrics and Gynecology for all candidates (Groups A and B) will be conducted by the entire Board at the Atlantic City Hospital, Atlantic City, N. J., from Friday, June 7, through Monday, June 10, 1940, prior to the opening of the annual meeting of the American Medical Association in New York City on Wednesday, June 12, 1940. Candidates are requested to note that the dates of the examinations have been advanced one day from those previously announced.

Application for admission to Group A, Part II, examinations must be on file in the Secretary's Office not later than March 15, 1940. Candidates for re-examination in Part II must make written application to the Secretary's Office before April 15.

Formal notice of the time and place of these examinations will be sent each candidate several weeks in advance of the examination dates.

The annual dinner of the Board will be held in New York City on Wednesday evening, June 12, 1940, at the Hotel McAlpin. For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Pennsylvania.

Mr. Vance Womack of Rattan, Oklahoma, has informed the Executive Secretary's office of an opening for a physician in his territory where no doctor or druggist is now located. He asks that any physician interested write or visit him concerning locating there.

Osler Club Visits Geology Museum

The museum of geology and paleontology at the University of Oklahoma proved an interesting point of study for the Osler Medical History Club of Oklahoma City, members of which visited the museum January 11 to study the vertebrae reptilian collection and the paleontology exhibits.

The club visitors were Dr. Bert Keltz, president, and Mrs. Keltz; Dr. L. J. Moorman, Dr. and Mrs. Anson Clark, Dr. and Mrs. Tulles O. Coston, Dr. and Mrs. John Lamb, Dr. and Mrs. Robert I. Trent, Dr. Gerald Rogers, Dr. and Mrs. Wood Shaffer, and Miss Pauline Harrell. Norman guests at the dinner following the museum visit were Dr. J. Willis Stovall, associate professor of paleontology, and Mrs. Stovall; Dr. Clifford Merritt, Dr. Iva Stephen Merritt, and Dr. and Mrs. C. E. Decker.

Receives Bacteriology Award

At the annual meetnig of the Society of American Bacteriologists in New Haven in late December, the Eli Lilly Award of a medal and $1,000 was presented to Dr. John G. Kidd of the Rockefeller Institute for Medical Research, New York. The award is made to a young man or woman under 31 years of age for outstanding contributions to bacteriology or immunology. Dr. Kidd, who has been a research assistant at the institute since 1934, received the honor for original work on animal tumors of virus etiology.

A. M. A. Convention Plans Under Way

"Plans are well under way for one of the greatest annual sessions of the American Medical Association ever held in its history," the Association's Journal for February 3 declares in an editorial. "This session is scheduled to take place in New York City June 10-14 inclusive. The meeting places of the various sections will involve the use of the Waldorf-Astoria, the Commodore, the Roosevelt and the Biltmore hotels; registration of Fellows and all the exhibits will be in the Grand Central Palace. The opening meeting will be held in one of the large assembly halls in the same area."

Principal Cities Report Deaths

The Buerau of the Census reports that 429,419 persons died in eighty-eight major cities in the United States in 1939 as compared with 424,348 in 1938, an increase of one per cent. Infant deaths decreased from 27,159 in 1938 to 25,713 in 1939. These figures were compiled from weekly telegraphic reports received from departments of health in the cities listed.

Because of the impracticability of making accurate estimates of city populations, total death rates were not computed. The weekly death totals reported in 1939 were consistently lower than the average totals for the preceding three years from January to July, but during the rest of the year they were closely similar.

Special Broadcast Set For February 21

A special broadcast on "Pasteur Conquers Rabies" will be presented from 9 to 9:30 p. m. central standard time, February 21, by the American Medical Association and the National Broadcasting Company.

The program, which will be broadcast by seventy stations of the Blue network, will be based on an article, "Watch Your Dog!" appearing simultaneously in Hygeia, The Health Magazine, and on official reports dealing with rabies in the United States. Music from the score which accompanied the motion picture on Louis Pasteur, made available through the courtesy of Warner Brothers, will be used on the program.

HAVE A STICK OF CHEWING GUM BEFORE YOU GO. YOU'LL FIND IT VERY REFRESHING
THANK YOU, DOCTOR. CHEWING GUM IS SOMETHING WE ALL ENJOY

Doctor—here's how wholesome Chewing Gum *helps build good will for you*

Every doctor knows the importance of ending up a consultation in a friendly, cheerful way.

Many doctors know how helpful it is to have on hand a supply of wholesome, delicious Chewing Gum to offer patients when saying "good-bye." This inexpensive enjoyment sends them away with a good taste in their mouths!

Aside from good-will value, as you know, chewing exercises the teeth, helps cleanse and brighten them and is a refreshing pleasure. Try it, doctor.

The National Association of Chewing Gum Manufacturers, Rosebank, Staten Island, New York

• OBITUARIES •

Dr. Dolph D. McHenry
1873—1939

Complying with the duties and traditions of our profession, we come now to take part in a memorial service dedicated to our departed brother, Dr. Dolph D. McHenry of Oklahoma City.

Born in Illinois, June 9, 1873, Dr. McHenry was reared in Nebraska, to which state his parents removed during his childhood. He died December 28, 1939.

In 1897 the degree of Doctor of Medicine was conferred upon him by University Medical College, Kansas City, Missouri. In that institution one of his teachers was the late, celebrated, Dr. Jabez N. Jackson.

Following his graduation in medicine, he located at Cushing, I. T., and was a general practitioner there until 1909. In the meantime Indian Territory and Oklahoma Territory were merged in the formation of the State of Oklahoma (1907).

In 1909 he decided to prepare himself for special work in Eye, Ear, Nose and Throat. To that end he took a course of study in Vienna, and then located at Oklahoma City where he spent the remainder of his life. Through his zeal, earnestness and indefatigable industry, he quickly attained prominence in his new field to the extent that he soon had a wide and enviable reputation that marked him as one of the more progressive medical men of the State until he was suddenly incapacitated by an attack of coronary thrombosis in 1931.

Then followed a long, enforced period of rest. For eight years he adapted himself to new and strange requirements—requirements that forbade activity in connection with the work that he loved. How earnestly and uncomplainingly he tried to adapt himself to this long period of inactivity made all of us marvel at his patience and apparent resignation. To every one who knew how much he loved work and how he despised idleness; to every one who sensed the struggles of the restless spirit in a frail body, it was a touching exhibition of patience and good sense; of fortitude, of courage —aye, of bravery in the presence of an implacable foe only half hidden from him.

Dr. McHenry was a consistent member of County, State and National Medical organizations. He was a member of Oklahoma City Academy of Medicine, and an early registrant of the American Board of Opthalmology.

He was a modest man; he was modest and kind and courteous in his contacts with his fellows of the medical profession. In professional meetings he spoke but seldom, but when he did speak his statements were brief, concise, constructive. He was very typically a physician who knew how "to listen and learn."

He was a good citizen, not because of fear or force, but because he tried to do what was right.

This brother of ours was a good husband, a good father, and a good grandfather.

Nothing else need be said. When these brief statements are put together and added each to the other, they make a picture of a man who "deserves well" of his family, his country and his profession.

This, then, is the legacy that he left. Let those of us who knew him remember him with gratitude and affection.

This is the legacy that he left, and, with profound condolences, we send a heart-felt record of it to his wife, his children, and his grandchildren.

LEROY LONG, Chairman,
J. T. MARTIN,
L. J. MOORMAN,
Committee, Oklahoma County Medical Ass'n.

Dr. William B. Hall

Death from a sudden heart attack claimed Dr. William B. Hall, pioneer Cimarron County physician, January 11 at his home in Boise City. He was 84 years of age, and had retired from active practice of medicine.

Doctor Hall came to Cimarron County in 1914 from Woodward County, where he had practiced for many years. He was County Health Superintendent of Cimarron County for several years. He entered the medical profession in 1882, and practiced in Iowa, Kansas, Arkansas and Oklahoma.

Surviving are his widow; three sons, Dr. Harry B. Hall of Boise City, J. Ivan Hall, R. F. Hall of Boise City; and one daughter, Mrs. Charles R. Alexander of Woodward.

Funeral services were conducted January 14 at the Boise City Methodist church, with interment in the I. O. O. F. cemetery in his home city.

Pediatrics Course Begins First Circuit February 19

The Post-Graduate Course in Pediatrics will begin February 19 in Northeastern Oklahoma. The first circuit will include Miami, Vinita, Claremore, Bartlesville, and Tulsa as teaching centers. To date, seventy-five doctors in this circuit have registered for the course.

The Post-Graduate Committee has secured the services of Dr. Wayne A. Rupe, Dr. Peter G. Danis, and Dr. Stanley L. Harrison, all of St. Louis, Missouri, as instructors for the first circuit. Dr. Rupe will give the first four lectures, Dr. Danis the fifth and sixth, and Dr. Harrison the last four. The instructors for the future circuits will be announced as soon as possible.

The fee for the course will be $6.00 which will include the lecture manual, and a certificate of attendance to those physicians who attend seventy per cent of the lectures.

The instructors will be available for lay lectures on child care. Any groups desiring to avail themselves of their services should make arrangements with the Secretaries of their County Medical Societies. These lectures to the laity are without cost.

Further information may be obtained by writing the Committee on Post-Graduate Education, 210 Plaza Court, Oklahoma City.

District Councilor Meetings

An invocation that is destined to become very popular was inaugurated the evening of January 29, when a meeting of the doctors of the first councilor district was held in Sayre. Dr. V. C. Tisdal, councilor for district one was in charge of the meeting. Through the efforts of Dr. Tisdal, and Dr. H. K. Speed, president of the Beckham County Society, who acted as hosts, over forty doctors from the counties in the district were in attendance.

The entire program was devoted to a report by Dr. W. A. Howard of the business affairs of the Association, together with a resume of the activities of the Association during the first nine months of his administration.

The following evening, a meeting of the doctors of district two was held in Cherokee with a fine representation of the doctors of that district in attendance. Dr. O. E. Templin, councilor of district two, opened the meeting and introduced Dr. H. E. Huston, President of the Alfalfa County Society, who presided the rest of the evening. Program details presented at the Sayre meeting were carried out, with Dr. Howard speaking on Association activities.

The House of . . . . **REGISTRATION**

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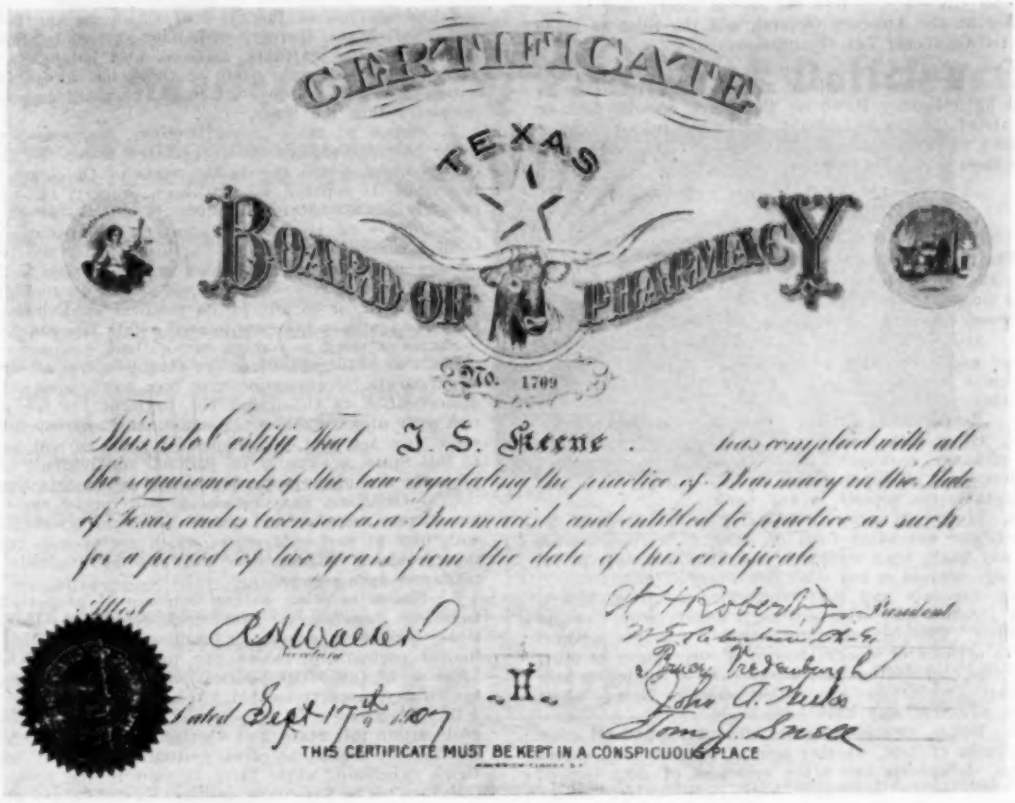
CERTIFICATE

TEXAS

BOARD OF PHARMACY

No. 1709

This is to certify that J. S. Keene has complied with all the requirements of the law regulating the practice of Pharmacy in the State of Texas and is licensed as a Pharmacist and entitled to practice as such for a period of two years from the date of this certificate.

Dated Sept 17th 1907

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Intangible Personal Property Tax Law Information

Many inquiries have been received for information relative to the provisions of the Intangible Personal Property Tax Law that became effective in the state January 1. Limited space prevents the publishing of the entire law and the rules and regulations made by the Oklahoma Tax Commission.

The ultimate interpretation of the law will of course be made by the courts of the state and, until such time as this procedure is accomplished, it will be necessary for all citizens to follow the law as interpreted by the office of the Attorney General, and the rules as made by the Oklahoma Tax Commission.

The office of your Association does not believe it possible to give you a hard and fast rule to follow in making returns. However, there are certain definite points of the law as brought out by the rules and regulations which everyone should consider. The major ones are given in the following outline.

RULES AND REGULATIONS

ARTICLE I.

Definition of Term, "Intangible Personal Property"

The term "intangible personal property," as defined by the Act, includes property subject to taxation, and also property which is exempt. The term "intangible personal property" means and includes the following:

1. Money and cash on hand, including currency, gold, silver and other coin, and any other species of money which is legal tender in the United States or any other country.
2. Bank drafts, certified checks and cashier's checks.
3. Other cash items, including personal checks, bills of exchange, customer's drafts, travelers checks, money orders, and all other forms of cash items which are acceptable for deposit in any bank.
4. Money on deposit, including certificates of deposit, and any other form of demand or time deposit in any bank, trust company, insurance company, postal savings account or any other depository of money.
5. Accounts and bills receivable, including brokerage accounts and other credits, whether secured or unsecured. This includes inter-company accounts, advances to officers or stockholders of a corporation or other business organization, and advances to affiliated or subsidiary corporations or any other person or firm to whom such advances may have been made.
6. Bonds, promissory notes, debentures and all other evidences of debt, whether secured or unsecured, except notes, debentures and other evidences of debt secured by real estate mortgages which are subject to the mortgage registration tax under Sections 12351 to 12362, inclusive, O. S. 1931.
7. Shares of stock or other written evidence or proportional shares of beneficial interests in corporations, joint stock companies, associations, syndicates, express or business trusts, special or limited partnerships, or other business organizations.
8. All interest in property held in trust or on deposit within or without this State, and whether or not evidenced by certificates, shares, or other written evidence of beneficial ownership.
9. Final judgments for the payment of money.
10. All annuities and annuity contracts.

ARTICLE II.

Exemptions and Exceptions

All property defined as "intangible personal property" is subject to taxation under the Act, except such property as is exempt, or is excepted from the provisions of the Act.

Property exempt from intangibles taxation under the express provisions of the Act is as follows:

A. Property Exemptions:

1. Obligations of the United States which are exempted from State taxation by any law of the United States. This includes all bonds of the United States and all accounts payable by the United States.
2. Obligations of the State of Oklahoma and political subdivisions thereof, including all bonds, notes, interest bearing warrants, accounts and judgments issued or payable by the State of Oklahoma, any county within the State, or any city, town, township or school district within the State.
3. Shares of stock in corporations, companies, and other business organizations organized under the laws of Oklahoma, which pay to the State of Oklahoma, or to any of its political subdivisions a property tax upon property located within this State.
4. Shares of stock in corporations, companies and other business organizations organized under the laws of any other State, domesticated in and paying to this State an annual franchise tax, and paying to the State of Oklahoma, or to any of its political subdivisions a property tax upon property located within this State.

Shares of stock in foreign corporations, companies or other business organizations are taxable unless all three requirements for exemption have been met; namely, (a) domestication in Oklahoma, (b) payment for the current year of a franchise tax under the Corporation License Tax Act, and (c) payment for the current year, to this State or some of its political subdivisions, of a property tax upon property located within this State. (The Oklahoma Tax Commission will furnish the various county assessors and county boards of equalization with lists of corporate stocks which are exempt under this provision. These lists will also be available to taxpayers upon request).

5. Shares or other written evidence of proportional beneficial interests in joint stock companies, associations, syndicates, express or business trusts, special or limited partnerships, which pay to the State of Oklahoma or to any of its political subdivisions a property tax on any property located within this State.
6. All interests in property held in trust or on deposit within this State, and whether or not evidenced by certificates, shares, or other written evidence of beneficial ownership, where there is paid to the State of Oklahoma or to any of its political subdivisions a property tax upon the property so held in trust or on deposit.

B. Ownership and Use Exemptions:

1. All property of the United States, and of this State, and of the counties, municipalities, and school districts of this State.
2. All property used exclusively for religious and charitable purposes within this State.
3. All property of scientific, educational and benevolent institutions, colleges and societies created under the laws of this State, provided such property is devoted solely to the appropriate objects of these institutions within this State.

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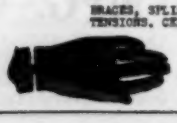
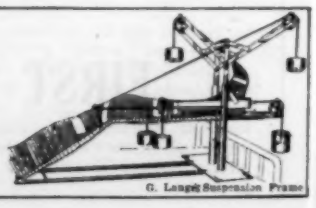




G. Lange Suspension Frame

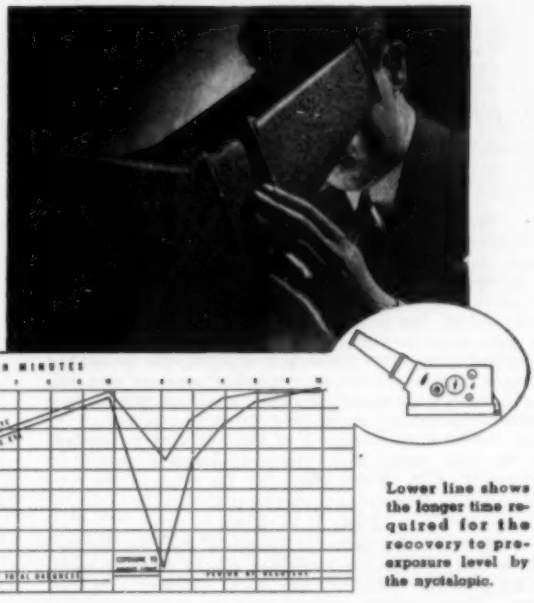
STUDIES IN THE AVITAMINOSES

This page is the second of a series on vitamin deficiencies presented by the research division of The Upjohn Company because of the profession's widespread interest in the subject. A two-page insert on the same subject appears in the February 17 issue of The Journal of the American Medical Association.

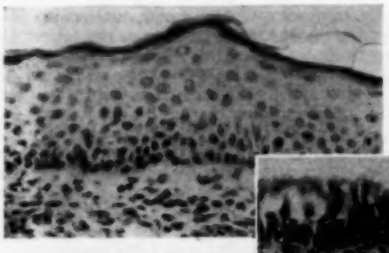
Manifestations of Vitamin A Deficiency

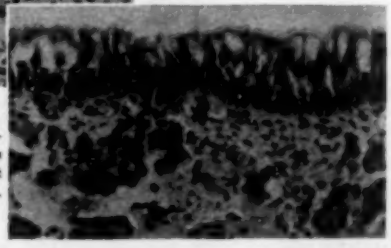
One of the early manifestations of vitamin A deficiency is nyctalopia, a loss of visual acuity in dim light. While several pathologic states (retinitis pigmentosa, toxic amblyopia, detachment of the retina) also produce night blindness, vitamin A deficiency is probably the most frequent cause. After exposure to the blinding glare of a bright light the normal eye adapts itself relatively quickly to lowered illumination. In nyctalopia due to vitamin A deficiency, the time required for recovery of visual acuity is longer.

In otherwise normal eyes, measurement of capacity for dark adaptation by means of the biophotometer has been suggested as a method of discovering vitamin A deficiency.



Lower line shows the longer time required for the recovery to pre-exposure level by the nyctalopic.





Above, stratified, keratinizing epithelium of the turbinate mucous membrane of a vitamin A deficient monkey; at right, normal mucosa.

Pathologic epithelial changes produced by vitamin A deficiency are illustrated by the photomicrographs of turbinate mucous membrane taken from normal and vitamin A deficient monkeys. The progressive pathologic process consists of atrophy of the epithelium, reparative proliferation of the basal cells and finally, as depicted in the upper photograph, replacement of the normal by a stratified, keratinizing epithelium.

UPJOHN

C. Lieu Tax Exemptions:

1. All property of State and National banks, trust companies, and Morris Plan companies which are subjected to a tax measured by or according to net income.

2. Notes, debentures and other evidences of debt secured by real estate mortgages which are subject to the Mortgage Registration Tax under Sections 12351-12362, Oklahoma Statutes 1931. (Such bonds, notes, notes and debentures are not specifically exempted by the Act, but are exempt because the definition of the term "intangible personal property" in Section 1 of the Act specifically excluded such property).

ARTICLE III.

Other Property Not Taxable

Other property which ordinarily might properly come within the term "intangible personal property," but which is not subject to taxation under this Act, because it is not included in the statutory definition of "intangible personal property," includes the following:

1. Tax sales certificates on real estate located within this State.
2. Cash surrender value of life insurance policies.
3. Oil and Gas Leases.
4. Oil and Gas Royalty interests.

In addition, intangible property of foreign insurance companies is not taxable under this Act, as foreign insurance companies pay a two per cent gross premiums tax which is in lieu of other forms of property taxation of such intangibles.

ARTICLE V.

Rate of Tax and Disposition of Proceeds

The rate of tax is the same in all counties upon the same classes of property. The rates are as follows:

A. Two mills upon each dollar of money on hand, money on deposit, and other cash items as defined in Subdivisions (a) and (b) in Section 1 of the Act, and as required to be listed under Subdivision 1, Items 1 to 4, inclusive, in OTC Form 940, which is the prescribed form of assessment list of intangible personal property.

B. Four mills upon each dollar of all other intangible personal property, as defined in Subdivisions (c) to (h), inclusive, of Section 1 of the Act, and as required to be listed under Subdivision 2, Items 6 to 12, inclusive, in OTC Form 940.

ARTICLE VI.

Basis of Valuation

All intangible personal property shall be assessed at its fair cash value, estimated at the price it would bring at a fair voluntary sale, as of January 1 of each year. Every county assessor and every county board of equalization is required to enforce this provision of the law to the fullest possible extent. The fact that real and personal property taxable under the general ad valorem tax laws may be assessed at less than its actual value is no reason why intangible personal property should also be underassessed, especially since it receives the benefit of a low preferential rate.

ARTICLE XV.

Tax Ferrets

Under the provision of Section 13 tax ferrets are not permitted, after January 1, 1940, to have anything to do with the assessment of intangible personal property. Tax ferrets are not permitted to take any action to attempt to have intangible personal property assessed after that date, and are not permitted to examine any of the reports or records relating to the assessment of such property.

ARTICLE XVI.

Assessment of Omitted Property

Section 13 prevents the assessment of omitted intangible personal property for any year prior to 1940, after January 1, 1940. Therefore any intangible personal property which has escaped taxation for the year 1939 or any prior year cannot be assessed or taxed unless the assessment is made before January 1, 1940. Any intangible personal property which is assessed before that date for any prior year shall be assessed according to the procedure authorized for assessment of omitted property under the regular ad valorem tax laws, and shall be taxed at the rates which were applicable to such property in the year for which such omitted property is taxed.

Any intangible personal property which is not assessed for the year 1940 or any subsequent year, shall, upon discovery, be assessed in the same manner as any other real or personal property which might escape assessment under the regular ad valorem tax laws. However, the tax rates provided by the Intangibles Tax Act will apply.

Any person who lists intangible personal property shall report the par or face value of all property listed as well as the actual value. In any case where the taxpayer fails to list the full par or face value of any class of intangible personal property owned by him, the difference between the amount of such intangibles actually owned, and the amount listed, constitutes omitted property and shall be assessed upon discovery of the omission.

Penalties

Various penalties are provided by the Act, some of which apply to the taxpayer and some to the officials administering the Act.

Section 8 provides a 100 per cent mandatory penalty for failure of the taxpayer to list any taxable property on or before March 1st of each year. (On or before the last day of February in the case of railroad and public service corporations). This is a tax penalty and not a valuation penalty, and a column is provided on the tax rolls for the addition of such penalty. It is mandatory that this be applied in every case where the taxpayer lists his property after March 1, (after the last day of February in the case of railroad and public service corporations) and also in every case where an omitted property assessment is made by the county assessor, county board of equalization or State Board of Equalization. The penalty of One Dollar under the general ad valorem tax laws for delinquent assessments is not applicable to intangible personal property.

Section 12 provides a penalty for the refusal of any person to list his property, or furnish any necessary information relating to his property, upon written demand of the county assessor or Oklahoma Tax Commission. Any person who refuses, upon such written demand, to furnish such information or make any list or statement required by the Act, shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine of not to exceed $500, or by imprisonment in the county jail of not to exceed six months, or by both such fine and imprisonment.

Section 16 subjects county assessors and county boards of equalization to the penalty of removal from office for failure to assess intangible personal property at its fair cash value estimated at the price it would bring at a fair voluntary sale, and also for failure to perform other duties of the office as fixed by the Act.

Section 17 provides that any person who divulges or discloses any information from intangible tax reports and records, contrary to the provisions of the Act, shall be guilty of a misdemeanor, and, upon conviction, shall be punished by a fine of not to exceed $500 or by imprisonment in the county jail for not to exceed six months, or by both such fine and imprisonment.

In addition to the penalties specifically provided by the Act, Section 12601, Oklahoma Statutes, 1931, applies also to the listing of intangible personal property. This Section is self-explanatory and is as follows:

> "If any person shall wilfully make or give under oath or affirmation, a false list of his taxable property, or a false list of the taxable property in use or possession or under his control, and required by law to be listed by him, or place false value thereon, such person shall be deemed guilty of perjury and upon conviction thereof shall be punished therefor as is by law provided for the punishment of perjury."

Wagoner Hospital Bill and The President's Message

Following is a copy of a message from the President to the Congress of the United States (House Document 604; Congressional Record, January 30). Following the receipt of the message, Senator Wagner, on behalf of himself and Senator George, of Georgia, introduced Senate Bill 3230 "to promote the national health and welfare through appropriation of funds for the construction of hospitals," which was referred to the Senate Committee on Education and Labor. Representative Lea, of California, introduced a companion bill in the House of Representatives, H. R. 8240, which was referred to the House Committee on Interstate and Foreign Commerce.

The President's Message

To the Congress of the United States:

In my special message to the Congress on January 23, 1939, I expressed my concern over the inequalities that exist among the states as to health services and resources with which to furnish such services. With that message I transmitted the report and recommendations on national health prepared by the Interdepartmental Committee to Coordinate Health and Welfare Activities and recommended it for careful study by the Congress.

Conditions described a year ago are substantially unchanged today. There is still need for the federal government to participate in strengthening and increasing the health security of the nation. Therefore, I am glad to know that a committee of the Congress has already begun a careful study of health legislation. It is my hope the such study will be continued actively during the present session, looking forward toward constructive action at the next. I have asked the Interdepartmental Committee to Coordinate Health and Welfare Activities to continue its studies.

In order that at least a beginning may be made I now propose for the consideration of the Congress a program for the construction of small hospitals in needy areas of the country, especially in rural areas, not now provided with them. Hospitals are essential to physicians in giving modern medical service to the people. In many areas present hospital facilities are almost nonexistent. The most elementary health needs are not being met.

The provision of hospitals in the areas to which I refer will greatly improve existing health services, attract competent doctors and raise the standards of medical care in these communities. The new hospitals should serve the additional purpose of providing laboratory and other diagnostic facilities for the use of local physicians, as well as accommodations for local health departments.

The proposed hospitals should be built only where they are most needed; they should not be constructed in communities where public or private institutions are already available to the people in need of service even if these institutions are not up to the highest standards. To insure proper location and good standards of operation, approval of hospital construction projects should be given by the Surgeon General of the Public Health Service, with the advice of an advisory council consisting of outstanding medical and scientific authorities who are experet in matters relating to hospital and other public health services.

Projects proposed for consideration should be submitted by responsible public authorities and should include assurance that adequate maintenance will be provided. Approval of projects should be preceded by careful survey of existing local hospital facilities and needs. Standards for organization, staff and continuing operation should be established by the Surgeon General, with the advice of the advisory council. A competent hospital staff and satisfactory standards of service should be required, including medical, surgical and maternity service. When indicated, special provisions should be made for the care of the tuberculous. In many areas of the South, the present acute needs for the care of Negro patients should also be met.

I suggest that these hospitals be simple, functional structures, utilizing inexpensive materials and construction methods. The facilities of the Federal Works Agency should be utilized in the planning and execution of the hospital projects. Title to these institutions should be held by the federal government, but operation should be a local financial responsibility.

I recommend to the Congress that enabling legislation for this program be enatced and that a sum of between $7,500,000 and $10,000,000 be appropriated to the Public Health Service to inaugurate the program during the next fiscal year.

I am confident that even this limited undertaking will bring substantial returns in the saving of lives, rehabilitation of workers, and increased health and vigor of the people.

This suggestion is not a renewal of a Public Works program through the methods of grants in aid. The areas which I have in mind are areas so poor that they cannot raise their share of the cost of building and equipping a hospital. Yet I believe that many of such communities have enough public-spirited citizens with means, and enough citizens able to pay something for hospital treatments, to care for operating costs of a hospital, provided they do not have to pay annual interest and amortization on borrowed money.

Treatment in such a hospital would, of course, be available to men, women and children who litterally can afford to contribute little or nothing toward their treatment.

One of the important difficulties in such areas at the present time is that young doctors hesitate to practice general medicine or surgery because of the utter lack of hospital or laboratory facilities. One cannot blame them.

In such areas also costs of construction are generally low and many local materials can be used. It is my belief that with the assistance of the Works Projects Administration the cost of building and equipping a hundred bed hospital can be kept down to between $150,000 and $200,000. This means that we could build fifty such hospitals for between $7,500,000 and $10,000,000.

This is not an ambitious project. This principle anould not be extended to government gifts to communities which are financially able to build their own hospitals. It is an experiment in the sense that the nation will gain much experience by undertaking such a project. At the very least it will save lives and improve health in those parts of the nation which need this most and can afford it least.

Franklin D. Roosevelt.

The White House,
January 30, 1940

* * *

Text of S. 3230 Introduced by Senator Wagner

Be it enacted by the Senate and the House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Hospital Act of 1940."

Sec. 2. For the purpose of assisting states, counties, health or hospital districts, and other political subdivisions of the states in providing better health and medical services through the provision of needed hospital facilities to serve rural communities and economically depressed areas, there is hereby authorized to be appropriated to the Public Health Service for the fiscal year ending June 30, 1941, the sum of $10,000,000 and

*Reprinted from the Journal of the American Medical Association, February 10, 1940.

for each fiscal year thereafter such sums as the Congress may deem necessary for carrying out the purposes of this act. Amounts appropriated under this act shall be available until expended.

Sec. 3. States, counties, cities, other political subdivisions or parts thereof alone or in combination wishing to participate in the benefits contemplated by this act shall make application to the Surgeon General of the Public Health Service (hereinafter referred to as the Surgeon General). Said applications shall contain information necessary to establish the existence of need for hospitals, to give assurance acceptable to the Surgeon General that such hospitals will be made available under appropriate conditions to all groups of the population, will be maintained in good repair, and will be utilized in furnishing service of satisfactory quality, in accordance with regulations hereinafter authorized to be prescribed.

Sec. 4. There is hereby established the National Advisory Hospital Council (hereinafter referred to as the "Council") to consist of the Surgeon General as chairman and six members to be appointed by the Surgeon General with the approval of the Federal Security Administrator. The six appointed members shall be selected from leading medical or scientific authorities who are outstanding in matters pertaining to hospitals and other public health services. Each appointed member shall hold office for a term of three years except that (1) any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term, and (2) the terms of office of the members first taking office shall expire, as designated by the Surgeon General at the time of appointment, two at the end of the first year, two at the end of the second year, and two at the end of the third year after the date of the first meeting of the Council. No appointed member shall be eligible to serve continuously for more than three years but shall be eligible for reappointment if he has not served as a member of the Council at any time within twelve months immediately preceding his reappointment. Each appointed member shall receive compensation at the rate of $25 per day during the time spent in attending meetings of the Council and for the time devoted to official business of the Council under this act, and actual and necessary traveling and subsistence expenses while away from his place of residence upon official business under this act.

Sec. 5. The Council is authorized to advise the Surgeon General with reference to the carrying out of the provisions of this act, including:

(a) The review of applications for hospitals submitted in accordance with and meeting the requirements of Section 2 and recommendation of such projects as in its opinion are needed, will be adequately maintained, and otherwise will fulfill the requirements of this act;

(b) The formulation of standards which are necessary to insure proper conduct of the hospitals and care of persons served by the hopsitals;

(c) The formulation of rules and regulations necessary to carry out the provisions of this act;

(d) The review of reports and inspections and, when necesssary, the making of inspections with reference to professional service and standards of maintenance of the hospitals.

Sec. 6. In carrying out the purpose of this act, the Surgeon General is authorized and directed, after consultation with the Council:

(a) To conduct, assist and foster studies and surveys with respect to needs for hospitalization and problems of hospital operation;

(b) To approve hospital projects, to designate the location, type, equipment and size of hospitals, and to allocate available funds to such approved projects;

(c) To provide training and instruction of personnel who will be required in connection with the hospitals;

(d) To cooperate with state and local health and welfare authorities and with professional agencies;

(e) To secure reports and to make inspections with respect to professional service and standards of maintenance of the hospitals and other matters pertinent to carrying out the purposes of this act;

(f) To adopt such additional means as may be found necessary or appropriate to carry out the provisions of this act, including the safeguarding of the quality of service furnished in hospitals;

(g) To make, with the approval of the Federal Security Administrator, such rules and regulations as may be necessary to carry out the provisions of this act;

(h) To lease hospital projects when completed to the applicant for an indefinite period, the consideration for such lease being the maintenance and operation of said hospital in accordance with the provisions of this act. If at any time said mantenance and operation by the applicant shall fail to meet such provisions, the lease shall be terminated by the Surgeon General on six months' notice.

Sec. 7. When a hospital project has been approved by the Surgeon General, in accordance with the provisions of this act, it shall be certified by the Federal Security Administrator to the Federal Works Agency for construction and there shall be allocated and transferred to the Federal Works Agency, out of funds appropriated pursuant to this act, so much of the appropriation as may be determined to be available for the project, and the Federal Works Agency is authorized to expend such sums for the planning, execution and construction of the project and pertinent facilities, including administrative expenses, site acquisition, the preparation of working drawings and specifications, award of all necessary contracts and supervision of construction; and the Federal Works Agency is further authorized to expend out of appropriations available to it, in accordance with the purposes thereof, such sums as may be necessary for the completion of the project but without regard to specific limitations imposed on the use thereof. Title to the properties so constructed and to the equipment installed therein, and to the land on which they are located, shall be in the United States.

Sec. 8. The Federal Security Administrator is authorized to accept on behlaf of the United States gifts of money, equipment and land to be utilized in carrying out the purposes of this act.

Sec. 9. The President is authorized to allocate from funds appropriated pursuant to this act, for the fiscal year ending June 30, 1941, a sum for all necessary expenses of the Public Health Service in administering the provisions of this act, including the training of personnel; and there is hereby authorized to be appropriated in each succeeding fiscal year such amounts as the Congress may deem necessary for such purpose.

Sec. 10. (a) There is hereby authorized to be appointed in the Public Health Service, in accordance with applicable law, such additional commissioned officers and other personnel as may be necessary in carrying out the provisions of this act.

(b) On recommendation of the Surgeon General, the Federal Security Administrator shall submit to the Bureau of the Budget on or before September 15 of each year a list of approved hospital projects under this act and cost estimates thereof, together with such other data as may be necessary for the preparation of the budget estimates.

(c) This act shall not be construed as superseding or limiting (1) the functions, under any other act, of the Public Health Service or any other agency of the United States relating to the prevention, diagnosis and treatment of disease; or (2) the expenditure of money therefor.

(d) The term "state" as used in this act shall include also the territories and insular possessions of the United States.

(e) The term "hospital" as used in this act shall include the physical facilities necessary for the prevention, diagnosis or treatment of disease, and for the protection of the public health.

(f) The Surgeon General shall include in his annual report for transmission to Congress a full report of the administration of the act, including a detailed statement of receipts and disbursements.

(g) This act shall take effect thirty days after the date of its enactment.

Heart Disease Patients Encouraged

A word of encouragement for those who have suffered from coronary thrombosis or occlusion (in which obstruction by a blood clot of an artery blocks the supply of blood to the muscles of the heart) is given in The Journal of the American Medical Association for February 10 by William Hall Lewis Jr., M.D., New York, in his report of the case of a business man who has resumed an unusual degree of physical activity for more than five years following an acute and severe attack of the ailment.

Until recently, Dr. Lewis points out, the condition was considered "immediately and potentially dangerous to life." It is now realized that evaluation must be based on the degree of organic damage resulting from the occlusion.

The subject of the author's report had his original attack when he was 43 years of age. The history of the case follows:

During the three weeks before the acute attack there had been seven or eight periods of discomfort below the breast bone. This usually occurred at the end of a day's work and lasted several minutes. The patient was indulging in athletics and leading an active, intense business life. His attack occurred during the forenoon.

The convalescent program was rigorously followed. It included seven weeks of complete rest in bed in the hospital. The patient remained at home for one month, foregoing business but undertaking physical activity by gradually increasing walks. He then spent six weeks in a sunny clime; usually twelve of the twenty-four hours were spent in bed and lying about on the beach in the morning.

Activities since then have slowly but steadily increased. Full, normal business activity was resumed in two years' time.

Smoking was dropped completely on hospitalization and has never been started again. He has had no coffee at any time, very weak tea irregularly and moderate alcohol irregularly.

Beginning one year after convalescence the following activities have occupied the subject: flying (as passenger and pilot) at various altitudes up to 15,000 feet, dancing, swimming and skiing each winter at altitudes up to 10,000 feet. All this has been accomplished apparently without detriment.

"This report," Dr. Lewis says, "is published not to stimulate others who have suffered from coronary occlusion to indulge in unusual endeavor but to encourage them in expectation of being able to pursue normal activities without too severe restrictions. The range of activities can be gaged only according to the capacity of the individual."

Another example of the wide latitude for exercise that may be possible for those with heart disease is contained in the same issue of The Journal in the report of two Johannesburg, South Africa, physicians on the case of a marathon runner.

Ernst Jokl, M.D., and M. M. Suzman, M.D., relate their experience with a man suffering from a heart disorder in which narrowing of the mitral valve (on the left side of the heart and controlling the flow of blood to the aorta) resulted in improper closing, thus causing the blood in the aorta (the large artery leading from the heart) to flow backward. On examining him before a marathon race in which he was to compete, the authors found that he had heart murmurs during both contraction and dilation of the heart. Although they advised the patient against participation in the race, he stated that he had run in similar races on many occasions without ill effects. He ran in this and subsequent races, and his physical condition, the authors say, "continues to be excellent." However, they report that on three occasions the patient has had typical attacks of circulatory collapse.

"The significance of this case is worthy of note in view of current opinions on the alleged dangers of exercise to persons suffering from valvular disease of the heart," the authors declare. "The recently adopted more liberal interpretation regarding the outcome of systolic murmums (those occurring during the contraction of the heart) may also be tenable with regard to uncomplicated valvular heart disease presenting diastolic murmums (those occurring during the dilation of the heart)" when these are due to such causes as were found in this case, or to a backward flowing of the blood in the aorta, of rheumatic origin.

Ends 35 Years of Service

The importance of the Council on Pharmacy and Chemistry of the American Medical Association in furnishing expert medical opinion in connection with the carrying out of the new Food, Drug and Cosmetic Act is emphasized by an editorial in The Journal of the Association for February 10 which summarizes the Council's accomplishments on the completion of its thirty-fifth year.

While it might be supposed that with the enactment of the new law there would remain little need for the Council's work, the editorial points out that the importance of this act is mainly in the field of drugs sold for self medication and that Congress did not give the Food and Drug Administration power to determine whether or not a drug is a worth while addition to the medical equipment.

Describing the work of the Council, the editorial says that its first task was to expose the most extraordinary of the deceptions practiced on the medical profession. Then came the more serious task of passing on proprietary drugs detailed to the medical profession. Valuable products were listed in New and Nonofficial Remedies, which was originally a column of The Journal and was later expanded into a book to which periodic additions were made as the Council's scope widened. Products are admitted according to a set of rules published for the information of physicians and manufacturers. "Remuneration in any form is never accepted for the consideration of submitted preparations," the editorial states.

While the rules now governing the acceptance or rejection of remedies are practically the same as those adopted in 1905, the editorial says, "an additional rule was adopted about fifteen years ago to the effect that concerns whose policies were contrary to scientific medicine and inimical to the best interests of the public and the medical profession would not be recognized by the Council.

"Advertising claims employed by manufacturers of drugs for products accepted by the Council have, in the main, attained standards of accurateness and truthfulness not found in any other field of marketing or in the entire medical world outside the United States. More and more physicians ask detail men whether or not their proprietary products have been accepted by the Council and if not, why not.

"Those firms which have been following the leadership of the Council have already found that it is much easier to comply with the new Food, Drug and Cosmetic

Act and the Wheeler-Lea Act in the case of their accepted medicaments than have some firms which have tried to ignore the Council by extolling nonaccepted preparations.

Announce Prize Award Rules

Notice of the Prize Award Contest of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Inc., has been made by James R. Bloss, M.D., Secretary. Rules governing the award are as follows:

(1) "The award which shall be known as 'The Foundation Prize' shall consist of $150.00."

(2) "Eligible contestants shall include only (a) interns, residents, or graduate students in Obstetrics, Gynecology or Abdominal Surgery, and (b) physicians (with an M.D. degree) who are actively practicing or teaching Obstetrics, Gynecology or Abdominal surgery."

(3) "Manuscripts must be presented under a nom-de-plume, which shall in no way indicate the author's identity, to the Secretary of the Association together with a sealed envelope bearing the nom-de-plume and containing a card showing the name and address of the contestant."

(4) "Manuscripts must be limited to 5000 words, and must be typewritten in double-spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis." Submits copies of Thesis and illustration to Secretary.

(5) "The successful thesis shall become the property of the Association, but this provision shall in no way interfere with publication of the communication in the Journal of the Author's choice. Unsuccessful contributions will be returned promptly to their authors."

(6) "All manuscripts entered in a given year must be in the hands of the Secretary before June 1st."

(7) "The award will be made at the Annual Meetings of the Association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the Association. The successful contestant must meet all expenses incident to this presentation."

(8) "The President of the Association shall annually appoint a Committee on Award, which, under its own regulations shall determine the successful contestant and shall inform the Secretary of his name and address at least two weeks before the annual meeting."

Site Purchased for Library Recommended

The acquisition of a site for a new Army Medical Library and Museum Building in Washington was recommended by the President in the budget for the fiscal year of 1941, which he submitted to Congress January 4. The budget contemplates that the Congress shall appropriate $600,000 for the purchase of the site and for preliminary expenses in connection with the building to be constructed and that the site be selected on East Capitol Street, in Washington, adjacent to the Congressional Library group.

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*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, Vol. 23, No. 2, pages 201-206, March, 1939.

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ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments From
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

"Thrombophlebitis." By Alton Ochsner, M.D. and Michael DeBackey, M.D.; Journal of the American Medical Association; January 13, 1940, Vol. 114, No. 2; page 117.

These authors have written several articles on this subject in the past year. Their work has been based on that of Leriche and Fontaine who first suggested that blocking the sympathetic nerves might influence thrombophlebitis.

The concept that mechanical blocking of the venous and lymphatic systems is of primary significance in the production of the clinical manifestations in thrombophlebitis is, in their opinion, inadequate.

Based on recent clinical and experimental investigations, they believe that many of the symptoms and signs are due to vasospasm of the arterial and venous systems and that the vasoconstricting impulses originate in the thrombophlebitic segment.

As the result of vasospasm there result increased filtration pressure, relative anoxia of the capillary endothelium and diminution in the flow of lymph, all of which increase the amount of perivascular fluid.

By interrupting the vasoconstrictor impulses with procaine hydrochloride infiltration of the sympathetic ganglions, there is produced a reestablishment of the normal exchange of intravascular and perivascular fluids.

The authors have treated 15 patients with 17 thrombophlebitic processes by procaine block of the sympathetic in the past year. They say that these cases are characterized by the prompt and permanent relief of all clinical manifestations in contrast with the usual case of thromboplebitis, in which there is fever for from four to six weeks and the likelihood of persistent undesirable sequelae such as edema, varicosities and ulceration.

They have produced prompt and permanent relief of pain in all instances.

In half the cases the temperature was said to come down to normal within 48 hours and in the other half within one week.

In more than half the cases the edema completely subsided in eight days and in the remaining ones in 12 days.

Sixty per cent of the patients were discharged from the hospital as cured within eight days after the institution of this therapy.

The dramatic results obtained by these authors in the treatment of thrombophlebitis certainly deserves attention.

LeRoy D. Long.

"The Use of Sulfanilamide in the Treatment of Peritonitis Associated With Appendicitis." By Isidor S. Ravdin, Johnathan E. Rhoads, and John S. Lockwood. Annals of Surgery, January 1940, Volume III, Page 53.

The mortality of appendiceal peritonitis has not shown a general decline during recent years in spite of the numerous advances in pre- and post-operative care. However, in the clinic of the authors, the mortality in a series of 809 consecutive cases of acute appendicitis has been reduced from 1.5 per cent in the first 552 cases to .4 of 1 per cent in the last 257 cases. They believe the improvement is the result of the employment of sulfanilamide in all severe cases in the latter group. No other known factor was changed.

In their series a number of patients with very extensive peritoneal infection secondary to appendicitis recovered with, they believed, much less reaction than would have been predicted on the basis of experience with the first 552 cases.

Sulfanilamide readily diffuses into peritoneal fluid in the experimental animal. All the available evidence indicates that the peritoneum is a favorable site for the action of sulfanilamide.

They believe that the peritonitis from appendiceal rupture is non-specific and that the improvement in mortality and in the course of the disease obtained with sulfanilamide is in agreement with the concept of Dr. Lockwood that the character of the lesion is more important than the specificity of the organism in determining the effectiveness of the drug.

Incidentally they call to attention the fact that, in their series, no cases of intestinal obstruction due to adhesions were encountered since the use of suction drainage of the stomach.

It has been their practice to use sulfanilamide in all cases that have been drained and in an occasional borderline case in which a rapidly advancing process has been found at operation but in which operation has been performed before the usual indications for drainage have appeared.

They have also employed the drug preoperatively as an adjunct to the delayed method of treatment and to protect the patient from peritoneal spread in appendiceal abscess where transperitoneal drainage may be necessary.

Under the heading, "Method of Administration," they make the following statement: "In patients with spreading peritonitis in which the limits of the peritonitis extended beyond the operative field, sulfanilamide is now given in 0.8 per cent concentration in physiologic saline solution by hypodermoclysis. The dosage is usually 8 Gm. the first day and is reduced about 1 Gm. a day, the amount being varied to some extent according to the response of the patient. In patients with milder infections the usual dose is 6 Gm. the first day by mouth. This is gradually reduced to 3 Gm. over a period of four to seven days, and then stopped. We have not attempted to adhere to a rigid dosage schedule but cite these figures as representative of our current practice. Each day's dose is given in four installments at six-hour intervals. The blood concentration of sulfanilamide should be maintained above 5 mg. per cent and we have kept it above 15 mg. per cent in certain cases."

"Complete blood counts should be made every 24 to 48 hours. If rapid anemia or leukopenia develops, the administration of the drug may have to be discontinued."

Comment: In occasional isolated cases where we have employed sulfanilamide in this manner we gained the general impression that it was of benefit. More recently our interest has been stimulated by Dr. J. Moore Campbell who is now surgical resident on our service at the University Hospital in Oklahoma City. Dr. Campbell came to us from the post-graduate school in Philadelphia where he was subjected to the teachings of Dr. Ravdin. The results now being obtained on our service under Dr. Campbell's direction (using Dr. Ravdin's procedure as outlined in this article) are compar-

able with those reported by Ravdin, Rhoads, and Lockwood in this article.

LeRoy D. Long.

"Aberrant Adrenal Tumor of Upper Part of Abdomen." Report of a Case With Six Year Cure. By Stuart F. MacMillan and Judson B. Gilbert, Schennectady, N. Y. Archives of Surgery, January 1940, Volume 40, Page 77.

A white married woman 51 years of age was admitted to hospital because of intermittent attacks of nausea and vomiting. The first attack was about a year before admission to hospital. The attacks appeared at first about once a month. Later they were more frequent. They were "short" at first, but later on lasted 2 or 3 days. There was a feeling of pressure in epigastrium but no pain. There was "moderate" constipation. There had been "slight" loss of weight. The appetite poor. Patient had recently noticed a mass in upper abdomen.

The patient appeared well developed and "fairly well nourished."

The pulse, temperature, respiration normal. Arterial tension 140/80.

Abdomen soft. No distention. "There was a freely movable firm rounded mass in the upper and middle portion of the abdomen, slightly tender and about the size of a large orange."

Gastro-intestinal x-ray showed no important abnormality with the exception that the mass appeared to be outside the gastro-intestinal tract.

Urinalysis normal three times. A fourth specimen showed a few R.B.C. and a few W.B.C.

Hemoglobin 61 per cent, R.B.C. 3,320,000. W.B.C. 7,000, polymorphonuclears 62 per cent, lymphocytes 28 per cent.

Blood area nitrogen and blood suger within normal limits. Blood Wasserman negative.

A surgical operation, (presumably exploratory in character, since there is no record of a preoperative diagnosis) was done, following a transfusion of blood. The mass was approached through an upper right rectus incision. There was "a nodular mass approximately 6 cm. by 10 cm. in the omentum just beneath and adherent to the middle of the transverse colon."

There were no evidences of metastases.

Finding it difficult to separate the mass from the transverse colon, the tumor and adherent portion of the colon "were resected in one piece," the continuity of the bowel being reestablished by lateral anastomosis.

The pathological diagnosis was hypernephroma.

Six years after the operation the patient was in good health.

Comments: The reporters are to be congratulated. A six year cure after operation for hypernephroma is most remarkable.

LeRoy Long, Sr.

"The Surgical Treatment of Pain (La Chirurgie de la Douleur)." By Jean Panet-Raymond, Montreal. L'Union Medicale du Canada, volume 69, No. 1, January 1940.

This is a part of a remarkably comprehensive symposium on the treatment of pain. The symposium is divided into three parts: 1. The Medical Treatment of Pain. 2. Physio-therapy in the Treatment of Pain. 3. The Surgical Treatment of Pain.

Apparently in order to show the consensus touching this important subject, Panet-Raymond presents a list of the subjects discussed at the Sixteenth International Neurological Reunion at Paris in 1937, as follows:

1. General Physiology and Pathology of Pain—A. Baudoin and H. Schaeffer.
2. Sympathetic system and Visceral Pain—Ayala (Rome.)
3. Pain as Viewed by the Psychiatrist—Nael-Peron.
4. Diagnosis of the Reality of Pain. Medico-Legal Considerations—O. Crouzon and H. Desoille.
5. Neurosurgery of Pain—Rene Leriche.
6. Roentgen Therapy for Pain.—J. Haguenau and L. Gally.

The author simplifies the question in this table which he designates as the plan he will follow:

1. Craino-Cerebro Meningeal Pain.
2. Pain Originating in Vertebro-Medullary Pathology.
3. Peripheral Pain.
4. Pain Resulting from Pathology of the Sympathetic System.

Under heading No. 1 he discusses:

(1) Fractures of the Skull, directing particular attention to the necessity of elevating a depressed fracture as soon as possible because as long as there is strong pressure on the dura mater there is severe pain.

(2) Osseous Tumors of the Skull. Osteosarcoma, myeloma, and meningeoma invading the bony wall are the most common. Pain resulting from either of them may be lancinating and terrible. If the infiltration is pretty well circumscribed a "Veritable Biopsy," including all the tumor and adjoining bone should be done.

(3) Meningiomata may cause severe headache by pressure upon contiguous nerves. Operative removal is usually advisable.

(4) Meningitis, both cerebrospinal and hemorrhagic, causes severe pain. Repeated lumbar puncture for rapid and definite decompression of the subarachnoid spaces is advised. The same is advised in trauma and cerebral contusion with bloody cerebro-spinal fluid.

(5) Abscess of the Brain, due most often to contiguous infectious processes like otitis media, produces most excruciating pain, often with symptoms and signs of meningitis. There should be surgical intervention in a systematic manner at the proper time.

Sometimes abscesses are multiple or diffuse, and there is little hope that an operation would be of service.

(6) Tumors of the Brain. Regardless of type or location, they are habitually accompanied by headache (Quelle que soit leur localisation les tumeurs cerebrales se manifestent habituellement par des cephalees). Tumors in the posterior cerebral fossa, those of the hemispheres of the cerebellum and those encroaching upon the floor of the fourth ventricle provoke the most severe headache. The pain is not in the bone, itself, but in the structures contiguous to it.

Manifestly, the treatment of brain tumor is a proper surgical operation if tumor is approachable surgically.

Under heading No. 2 he discusses,

(1) Fractures with pressure upon the cerebrospinal axis may cause severe pain, regardless of whether the fracture is in a previously sound bony structure, or a pathological fracture associated with previous disease of the bones, such as metastatic malingnancies, etc. In any case the treatment must be adapted to the pathology, and it may have to be surgical or otherwise.

(2) Tumors involving or encroaching upon the cerebrospinal axis, some of them extra-medullary and some of them intramedullary. These tumors are usually the cause of motor, sensory and trophic disturbances, most of them being accompanied by severe pain. Some of tnem may be approached surgically.

(3) Degenerative Lesions are mentioned, such as Charcot's disease and syringo-myelia. In general, surgical operation does not cure, but in an occasional patient may produce temporary relief.

(4) Specific Infections — tabes, meningo-myelitis, etc., may sometimes be greatly relieved by a cordotomy. In this class, however, only temporary relief can be expected.

Under heading No. 3 he discusses Peripheral Pain.

This is a much more hopeful situation. "It is one of the most eloquent chapters in neurosurgery" (Cest un des chapitres les plus eloquents de la neurochirurgie).

(1) Neuralgia of the Cranial Nerves. The most typical example is Trigeminal Neuralgia, or Tic Douloureux of the face, meaning painful spasm of the face, always on one side, only. The author gives a classical description of the "crises" when the unfortunate patient suffers the most acute agony imaginable. He also very sharply directs attention to the fact that it is not facial neuralgia, reminding the reader at the same time that the facial nerve is a motor nerve.

After enumerating the many and various therapeutic procedures advised, the author endorses only two plans of treatment: First, the injection of 90 per cent alcohol into the affected branch of the trigeminal. Incidentally, he objects to injection, or attempted injection into the Gasserion ganglion, he regarding it as an intracranial procedure fraught with danger. While the injection of alcohol into the affected branch does not usually produce permanent relief, there is definite immediate relief that may last for a number of weeks or months. Second, in appropriate situations, intracranial section of the sensory root of the Gasserion ganglion. This is usually followed by permanent relief.

(2) Peripheral Neuritis in certain locations, and notably of the occipital, is relieved by the injection of alcohol. It is not advised in the more important nerves, like anterior crural (femoral) and great sciatic.

Under heading No. 4 he discusses Pain of Sympathetic Origin.

For basic investigations of the question of pain originating in the sympathetic system, much credit is given to Andre-Thomas, Guillaume, Roussy, Lhermitte and Danielopolu. Investigation was continued and practical application made of the knowledge gained by Leriche and Fontaine of Strasbourg.

Pain associated with pathology of the sympathetic nervous system is more obscure, more irregular than that associated with the cerebrospinal axis and the peripheral nerves, but is not less tenaceous. The facts concerning it must be ascertained by knowledge of anatomy and physiology and most industrious study. The author, in this connection, refers to an article by Professor Urgele Gariepy published in L'Union Medicale in 1934.

The author arranges all treatment of the morbid entities of the sympathetic system under six headings, to wit:

1. Infiltrations of the Ganglions.
2. Central Sympathectomies.
3. Periarterial Sympathectomies and Arteriectomies.
4. Lumbar Encephalography With the Injection of Gas.
5. Ramisection and Ganglionectomy.
6. Splanchnectomy.

(1) Ganglion Infiltration. The principal indications are angina pectoris, inoperable diseases of the spine with great pain—Potts disease, cancer, visceral crises by tumor or spasm.

(2) Periarterial Sympathectomy. Applicable in painful stumps after amputation, spasm of arteries of the legs, Erythmomelalgia, Raynaud's disease, Buerger's disease.

Arteriectomy suppresses the initial cause by interrupting the net work of sympathetic fibres.

(3) Lumbar Encephalography with the injection of gas to dilate the ventricles of the brain for the relief of headache, cause undetermined, and of a rebellious character.

(4) Ramisection, Ganglionectomy, Splanchnectomy. These operations seem to act especially upon the motor constrictors, and appear to be of service in the presence of certain algic phenomena (ces operations semblent agir surtout sur les vaso-constricteurs et peuvent ainsi avoir sur certains phenomenes algiques dus a l'hyperhemie locale une action bienfaisante). "They have their indications in most of the syndromes already enumerated."

"Finally, Splanchnectomy, as practiced especially by Max Peet, ought to give good results in essential arterial hypertension in diminishing the blood supply of the suprarenals.

Comments: In this exhaustive article the author makes the statement that cerebral tumors are habitually accompanied by headache (Quelle que soit leur localisation, les tumeurs cerebrales se manifestent habituellement par des cephalees). While that is the rule, there are distinct exceptions. For example, we have seen a boy 13 years of age whose chief complaints were complete deafness of the left ear and attacks of nausea and vomiting. There was no headache, nor was there pain in the distribution of any of the intracranial nerves. He was investigated because of the complete unexplained deafness and the attacks of nausea and vomiting which usually appeared suddenly and lasted but a short time. A neurological examination seemed to warrant a diagnosis of cerebral tumor involving the left 8th cerebral nerve. Operation disclosed an extensive glioma.

LeRoy Long, Sr.

"Clinical Experiences With Stilbestrol." By Conrad G. Collins, John C. Weed, B. Bernard Weinstein, and Frank R. Lock. American Journal of Obstetrics and Gynecology, January 1940, Volume 39, Page 117.

These authors review briefly the introduction of this new synthetic preparation with effective estrogenic properties in 1938 by Dodd of England.

Stilbestrol used in this small series of patients, when standardized by the Allen-Doisy method, 1 mg. of stilbestrol was found to have the same activity as 25,000 international units of estrone.

This is a report of 50 patients, with 19 cases of physiologic menopausal syndrome, 16 cases of surgical menopausal syndrome, 13 cases of hypoestrinism and two cases of senile vaginitis.

These authors report their results as excellent in the relief of symptoms very shortly after the inauguration of therapy. They also state that 16 of their patients had previously received estrogenic therapy with biological preparations without relief whereas they obtained proper relief from symptoms with Stilbestrol medication.

Each of their patients was individualized in giving treatment and most of their treatment so far has been intramuscular therapy and they are only recently employing oral administration. In most of their patients they found it better to give an initial dosage of 5 mg., decreasing the amount administered as the symptoms were controlled, though early in their series they employed 1 mg. intramuscularly once or twice weekly.

They discovered no definite toxic effects and no patient completely intolerant to Stilbestrol. However, approximately 60 per cent of their patients complained of nausea at some time during the treatment but the nausea was reduced upon decreasing the dosage. They also state that nausea following oral administration was frequently relieved by changing to intramuscular injections.

In only one instance was nausea sufficiently severe to cause cessation of therapy for the period of a week and then therapy was resumed without untoward effects. It is their feeling that sodium bicarbonate should be given concurrently with Stilbestrol to reduce nausea.

From their results they feel that Stilbestrol is to be recommended because of its ease of administration, relative low cost, and the wide range of utility. They also report that oral administration has yielded satisfactory results in those patients to whom it has been given.

They list certain recommendations about the use of the drug which follow in quotations: "Our observations regarding the administration of Stilbestrol where estrogenic therapy is indicated lead us to suggest that: (a) therapy be individualized; (b) the initial administration be by the intramuscular route and preferably in large doses (5 mg. once or twice weekly); (c) when symptoms are controlled the dosage may be reduced to 1 mg. once or twice weekly; (d) a patient adequately maintained on such dosage may have oral administration substituted for intramuscular; (e) the dosage for oral therapy should be successful if given in a quantity equivalent to three times the previous intramuscular administration; (f) when oral administration is utilized sodium bicarbonate should be administered concomitantly."

Comment: Stilbestrol is a synthetic preparation which has very powerful estrogenic properties and I have been extremely interested in employing it upon clinical trial since last October in a reasonably large group of patients.

There can be no question of its effectiveness in the

control of symptoms in the menopausal syndromes, whether surgical or physiological.

There have been several instances of nausea and rather severe headaches in patients who have had oral administration in sufficient quantities to relieve symptoms. I entirely agree with these authors that patients are more tolerant to intramuscular injections than to oral administrations. It is also quite true that the nausea will rapidly disappear and not reappear with a reduced dosage of the drug.

With the high margin of safety of the drug demonstrated in pharmacological experimentation, and with the only moderate nausea and headache found in therapeutic use in human beings, Stilbestrol must be looked upon as a very powerful estrogenic substance which has a distinct place in the treatment certainly of the vasomotor symptoms associated with the menopause and it may be employed in certain patients with effective relief of symtoms where the usual biologic preparations have been inadequate.

However, one must well understand that there is a certain amount of nausea and headache especially when the drug is given in higher dosages by oral administration.

Wendell Long.

"Treatment of Metromenorrhagia With Testosterone Propionate." By W. C. Sturgis, A. R. Abarbanel, and D. S. Nader. American Journal of Obstetrics and Gynecology, January 1940, Volume 39, Page 102.

For the purposes of this report, the authors have selected fourteen typical cases of metromenorrhagia treated by testosterone propionate and are, in this article, chiefly concerned with the average minimal dosage necessary to control the excessive bleeding. "The immediate treatment of metromenorrhagia with testosterone propionate proved to be highly successful."

They have observed that the effects from testosterone on the endometrium are variable and that one may find all types of endometrium in the patient's controlled with testosterone, including progestional response of the endometrium, hyperplasia, and in prolonged chronic injections hypoplasia. However, these authors feel that the principal means of effectiveness of testosterone lies in its action upon the myometrium where the intermittent rhythmic motility is inhibited and there is a direct squeezing action on the blood vessels of the myometrium, thereby reducing the flow of blood to the endometrium. (This reasoning was well substantiated in a paper read by Abarbanel in Hot Springs last September at the meeting of the American Association of Obstetricians, Gynecologists, and Abdominal Surgeons).

The dosage of testosterone employed at any single time varied from 5 to 25 mgs. and the average minimal dosage required to lessen the bleeding materially ranged from 10 to 30 mg. "The total dosage necessary to stop the flow completely ranged from 10 to 120 mg., with an average of 40 to 60 mg. Two to four injections at intervals of two to four days were usually found sufficient. Injections should not be repeated during the transient exacerbation of bleeding which frequently occurs."

"When used prophylactically, the dosage varies somewhat with the type of endometrium found premenstrually. In cases with a secretory or an interval, non-secretory picture, a total of 10 to 30 mg. of testosterone propionate given in divided doses, subcutaneously, in the seven to ten days before the expected period is usually sufficient to control the succeeding period. In cases of hyperplasia, 50 to 100 mg. given in divided subcutaneous doses during the last two or three weeks of the cycle usually check the tendency to excessive flow."

It will be noted that these dosages are much smaller than have been frequently employed and reported by others.

It is felt by these authors that the subcutaneous route apparently provides for a more effective per-dose action and therefore requires a smaller total dosage to achieve a therapeutic result. However, where the flow was profuse and free, the initial injection was given intramuscularly for a more rapid initial effect.

They report that the only possible sign of defeminization ever observed was loss of libido in two patients.

Comment: Abarbanel, who has done most of his work on testosterone in the Gynecological Department of Johns Hopkins University, has done much to establish this drug as an effective means of treating metromenorrhagia. In his paper, now in the press, delivered last September, he reported a much larger series of patients with an extremely high percentage of effective and definite results.

He must likewise be given credit for the best explanation of the manner in which testosterone reduces excessive uterine bleeding. He has demonstrated that the uteri have a blanched appearance and that the vessels in the myometrium are definitely "squeezed," thereby presumably reducing the flow of blood to the endometrium.

He must likewise be given credit with others for assisting in establishing a minimal dosage to produce effective results. It is quite noteworthy that this minimal dosage is far below the dosage used by Geist to produce masculinization effects.

These authors report no defeminization except loss of libido in two patients out of 14. However, even with minimal dosages such as these, the many discussions that have been had upon this subject show that occasionally there will be slight increase in hair upon the lips.

Even with these minor disadvantages, and with due regard to the fact that none of the masculinizing effects have been permanent even with larger dosages, testosterone propionate must be looked upon as a very valuable additional means of controlling metromenorrhagia in difficult situations.

However, it is equally true that in the employment of any of the glandular products, very careful study should be made of the individual patient in order to determine the nature of the glandular hormone that should be given, the dosage to employ, and the length of time that the drug should be used.

Wendell Long.

EYE, EAR, NOSE AND THROAT

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"A Study of Cycloplegia Mydriasis by Use of Atropine, Scopolamine and Homatropine-Paredrine." Digested from a Paper read at The Chicago Ophthalmological Society, Oct. 16, 1939. Published in the Digest of the Ophthalmology and Otolaryngology, January, 1940. Original paper by James Marron, M.D., Chicago, Ill., Department of Surgery, Division of Ophthalmology, of The University of Chicago.

This investigation was undertaken to determine for Atropine and Homatropine-Paredrine: (1) the length of time necessary for the induction of complete cycloplegia and mydriasis, and (2) the length of time necessary amount of minimum range of accommodation and maximum mydriasis; (3) the duration of maximum cycloplegia and mydriasis, and (4) the length of time necessary after instillation of cycloplegia before close work could be resumed and the return to the normal range of accommodation and pupillary diameter.

Author's Procedure.—The subjects for this investigation were the students and faculty members of The University of Chicago, an exceedingly cooperative and highly intelligent group of patients. These individuals came to the Eye Clinic complaining of symptoms in general referable to excessive use of the eyes for near work, or merely for a check-up. Patients with ocular pathology other than refractive error were excluded from

the study. In all cases the corrected vision in each eye was at least 1.2.

The methods of instillation of the cycloplegic solutions and of measurements of the range of accommodation and diameter of the pupil were the same in all cases. Before applying the solution the patient was requested to look down, the lower lid pulled slightly away from the globe, and the upper lid lifted well up. Then one drop only of solution at room temperature was dropped onto the eyeball above the limbus and allowed to roll down over the cornea. The regions of the punctae were held tight for at least one minute by the clock.

The diameter of the pupil was measured to the nearest .5 mm. by a Schlosser Tangent Pupillometer, the eyes fixing an object approximately twenty-five feet distant.

A Prince's Rule with a small sliding test card holder was most convenient for measuring the range of accommodation. The test print was a six-point B 8. In the trial frame before the eye to be measured was placed a spherical lens which might well roughly approximate the patient's refraction plus a three diopter lens. For example, before a 2 hyperopic eye a plus 5 lens was placed, while before a 4 D myopic eye a minus 1 lens was placed. The subject was then coached to signal as soon as he could no longer differentiate the B 8. Immediately, each found the near point easily detected but were somewhat uncertain about the far point. However, after a few practice runs, the patient became surprisingly consistent about even the far point. The near and far points were read off the rule to the nearest .5 cm., transposed into diopters, and the range of accommodation determined. All instillations and measurements were made by the writer.

Atropine Sulfate one per cent T. I. D. Ten Drops Total.—The average age of the one hundred seven patients in the group was 22.5 years. The age range was between fifteen and forty years. In determining the distribution of refractive error the spherical equivalent of the sphere-cylinder combination was used. The strongest cylinder in the series was only 2.25 D. In each of these cases the measurements were made and atropine instilled at 8:00 a. m., 12:00 m., and 4:00 p. m. for three days. On the morning of the fourth day the last drop was instilled (making a total of ten), the refraction done, and the measurements again made. The patients then returned for measurements each day for two weeks in all cases, and daily thereafter in most cases.

Cycloplegic Effect.—After the instillation of the first drop of atropine sulfate, the range of accommodation was found decreased after five minutes, sharply falling in the next thirty minutes, then more slowly. This slow decrease continued until after the fourth drop when the full effect had been attained. Further atropinization merely maintained the cycloplegia at 1.9 D range of accommodation. After the last installation the accommodative power fairly rapidly returned so that by the third day, the average patient could read newsprint. A few read by the second day, and a few not until the fourth day. After the thirteenth day a slight drop in the range was observed with a gradual rise so that by the eighteenth day slightly greater than starting range was found, an advantage soon lost. In this large series 70 per cent of eyes were within .5 D more or less of the 1.90 average. In no case was the variation more than 1.0 D. Each individual subject had reached his low level of range of accommodation at the 32nd or 48th hour reading and this level, be it 2.7 D, 1.5 D, or as the case may be, was maintained until cessation of drops.

Mydriatic Effect.—Five minutes after the atropine was placed in the eye an average decrease of .6 mm. in the pupillary diameter was found. This initial constriction was found in all the eyes in this series amounting to .5 mm. in most cases and 1.0 mm., in the remainder. The pupil dilated so that by forty minutes there was a maximum average diameter of 7.9 mm. This was maintained throughout atropinization. However, in sixteen eyes, after six or seven drops, the pupil was found to have decreased by .5 mm. in diameter. In general, four to six days after the last drop the pupils reacted to light, and original pupillary diameter was observed by the twelfth day.

Atropine Sulfate one per cent T. I. D. Sixteen drops Total.—In order to discover if more prolonged atropinization than ten drops in three days would give greater cycloplegia, thirteen patients were carried through for five days, three times daily, and the refraction done on the sixth day for a total of sixteen drops of Atropine one percent. The age range of this group was eighteen to thirty-one with an average age of 22.2 years. In this smaller group after the sixth drop the range of accommodation did not change appreciably. The range at refraction here also was 1.9 D. These patients required an average of three and a half days after the last drop to read newsprint. The initial pupillary constriction was found here also in all cases.

Scopolamine Hydrobromide one-fourth per cent.—The average age of the twenty-one patients upon which scopolamine cycloplegia was studied was 23.3 years ranging from fifteen to thirty-seven years. Hyoscine is a very powerful, fast-acting drug under which the range of accommodation diminished very quickly so that maximum effect was obtained in forty minutes to a lower of 1.6 D., persisting for at least ninety minutes. The accommodative power gradually returned so that by the third day when the range was again 3.3 D. the average patient could read. Normal range of accommodation was present by the tenth day.

With scopolamine also there was an early constriction of the pupil observed in all but two patients. Full mydriasis of 8.0 mm. average diameter was produced in twenty minutes, lasted at least ninety minutes, and was normal by the eighth day.

Homatropine-Paredrine.—Into the eyes of this group of twenty-five patients, were instilled Homatropine hydrobromide five per cent, five minutes later Paredrine one per cent, and five minutes later Homatropine hydrobromide five per cent, one drop only each time. The age range here was seventeen to fifty-seven years with an average age of 28.0 years. The moderate conjunctival congestion and smarting caused by the Homatropine was promptly relieved by the Paredrine.

After the first drop the range of accommodation rapidly decreased so that the full effect was reached after fifty minutes. The range of 1.6 D was maintained thirty minutes longer after which a smooth return of accommodative power began so that after three hours the range was 2.4 D, and after six hours, when the range was 3.4 D, the patient could read. Normal accommodation was present at forty-eight hours.

After the usual early constriction, the pupil dilated to a maximum diameter of 8.0 mm. in thirty minutes where it remained for another hour. Normal pupillary diameter was found in forty-eight hours.

"A Survey of the Use of Sulfanilimide In Acute Otitis Media." Karl Musser Houser. The Laryngoscope, September, 1939.

While there can not be any definite conclusions from the data furnished, the results noted are very interesting. The author of the report furnishes the following figures:

1. Almost 90 per cent of the physicians cooperating in the survey are using sulfanilimide in the treatment of acute otitis media. It is possible that most of the enthusiasts replied to the questionnaire, while those not using the drug or those having poor results failed to respond. In this event, the percentage of favorable replies would drop greatly had a full response been obtained.

2. Sixty per cent of the pediatricians and otologists who have had experience with sulfanilimide believe that its use reduces the incidence of acute surgical mastoiditis.

3. The majority believes that if used it should be used early, before mastoiditis has had a chance to develop; 58.5 per cent use the drug before the results of cultures are secured.

4. In a series of 9,667 cases, a mortality rate of 0.041 per cent, or one death in 2,417, cases was reported.

5. In cases where the pneumococcus is either found or suspected, sulfapyradine is probably the drug of choice.

6. There is growing clinical evidence to support the idea that the blood concentration is not as important as previously supposed.

7. This survey shows that the use of sulfanilimide in acute otitis media is widespread, that its use is relatively safe, and that those using the drug are as a rule enthusiastic over the results obtained; this enthusiasm, however, lacks the supporting proof of control cases.

Comment: There is always the possibility of masking the clinical course of an otogenous infection with the use of sulfanilimide and giving rise to a latent course of the disease. The complete eradication of the existing focus of infection is important. If this is not done, sulfanilimide is many times ineffective.

"A Study of Ten Cases of Deep Infection in the Neck." C. W. Pond, M.D., Pocatello, Idaho. Annals of Otology, Rhinology and Laryngology, December, 1939.

This is simply a report of ten cases. The anatomy of the region is not discussed but reference is given to Mosher's and others in regard to this. This report is interesting because of the fact that it shows that ordinary sore throats, tonsillitis, etc., may be of fatal termination. It also brings out the fact that tonsillectomies done with a local anaesthetic has hazards as grave as those with a general anaesthetic (such as lung abscess, etc.). This is true no matter how well the operation is done nor how correct the technique may be.

The author cites the report of Shapiro which includes one hundred ninety-four tonsillectomies done with a local anaesthetic. Shapiro mentions three possible sources of infection in the course of a local tonsillectomy, i. e.: 1. Injection through the tonsil tissue carrying organism from the infected tonsil itself. 2. Contamination of the needle or the solution prior to injection. 3. Infection of the mucous membrane at the site of injection.

There is another type of deep infection of the throat in which throat surgery is not an etiological factor. A. L. Beck in his report of this type of case gives as the exciting factors the tonsil, pharynx, adenoids, pharyngeal lymph nodes, mastoid, petrosa and the nose and sinuses.

The author reports his ten cases in detail, with signs, symptoms, laboratory findings, treatment and the result obtained. He summarizes his conclusions as follows:

1. That many cases of deep infections in the neck, if treated early, can be treated conservatively.

2. That peroral incision will prove satisfactory in retropharyngeal abscess.

3. That the external incision should be resorted to in all cases of infection of the parapharyngeal space where trismus and swelling are present and where tonsillectomy has not been performed. The incision may be made through the fossa when the tonsils have been removed and the fossa bulges.

4. That hemorrhage may take place from an internal incision if prompt free drainage is not obtained.

5. That most of the deep abscesses of the neck result from infection in or about the tonsil or follow tonsillectomy, particularly when local anaesthesia is used.

6. That probably case ten died from an encephalitis by bacteria being injected directly into the carotid artery, even though no evidence could be found at postmortem examination.

"Neuromyelitis Optica." A. G. Athens, M.D., Duluth, Minnesota. American Journal of Ophthalmology, December, 1939.

A case of this character is comparatively rare. Sudden blindness occurred in a boy, age 15. There was evidently an acute diffuse myelitis. Within two days of the onset vision was so blurred that he could not read. Prominent symptoms were headaches, nausea and vomiting. He was ataxic. R.B.C. were normal; W.B.C. 20,000. Temperature normal. Other cases reported show a wide variation of findings in the fields. This case showed large central scotomata as well as loss of color sense for red and green.

A diagnosis, from the electrocardiogram, was made of sinus arrhythmia. This was wrong as soon shown by the disappearance of the arrhythmia.

One of his complaints was pain on rotating the eyes up and out. About twenty days after the onset of the blindness, the following symptoms (myelitic) developed. Weakness of the legs, uncertain gait and soreness in the lower back. Urinary retention was present, later involuntary stools. Spinal puncture showed a pressure of 19 mm. and a cell count of 180. Myelitic symptoms continued to spread upward causing the patient to lose sense of position of his extremities and have a great deal of vertigo.

Differentiating from multiple sclerosis (which it closely simulated): High degree of bilateral visual loss; the age of the patient; and no sign of relapse months later. Recovery was complete in ten weeks. (Bibliography).

PLASTIC SURGERY

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"Burn Shock." H. M. Trusler, M.D., H. L. Egbert, M.D. and H. S. Williams, M.D., Indianapolis, Indiana. A.M.A. December 16, 1939.

This article describes a method which is a radical departure from the present trend in the management of burns. It may well be understood from the investigations carried out by these workers some of the principles which they have laid down. These principles are: 1. That the toxemia previously ascribed to burned tissue probably does not exist; therefore is not responsible for death in case of burns. 2. Since toxemia does not exist it is doubtful that large quantities of fluid, that is, quantities beyond that necessary to control the blood stream concentration, should be given. 3. That the death from early burns is due to immediate or delayed shock.

Mechanism of burn shock: The chief factor in burn shock is reaction of capillaries to thermal injury. Subsequent to a burn capillaries dilate, circulation stagnates, blood plasma escapes through the injured vessels into the tissue and tissue spaces. If the burn involves a sufficiently large area, enough blood fluid is lost to cause shock and death. This is through circulatory shock due to the loss of blood.

If the burn is of such degree that the patient survives the immediate shock stage the inflammatory reaction of the capillaries persists with continued loss of blood fluid and stagnation of the circulation. With the continuance of the processes of inflammation the loss of fluid becomes generalized, extending to the liver, lungs, and finally to all parts of the body.

Water intoxication: The author next discusses water intoxication first described by Rowntree 1923. He notices a particular symptom complex in patients who ingested extreme amounts of fluid especially those patients who had diabetes insipidus who continued to drink their customary large quantities of water after urinary output had been sharply reduced by pituitary products. Rowntree then gave animals large quantities of distilled water by mouth and observed a syndrome which he called water intoxication, characterized by progressive asthenia, muscular twitchings, convulsions, coma, and death. The chief pathologic feature observed to be present was cerebral edema accompanied by a sharp reduction in the serum chlorides.

Because of the fact that enormous amounts of water were necessary in the production of this symptom complex, the subject was forgotten.

Water intoxication in relation to burn shock: With these facts in mind the authors observed burns and realized that many burns show evidence of water intoxication. A case is presented which exhibits such a phenomena. Experimental studies were carried out on dogs the results of which are given in detail, which indicates that in severe burns when large quantities of water are given without replacement of serum protein and serum chlorides the animal showed symptoms of water intoxication and died.

Further blood chemistry studies indicate that if no fluids are given that there is a marked blood concentration at death but that the continuous forcing of fluids by mouth without replacement of the vital elements results in water intoxication and blood laking. This latter condition was found to be best controlled by replacement of serum, transfusions and the use of normal saline. Extensive burns present extremely complex problems in management.

From this article we have gleaned some new conception of the reaction to burn shock. The first case, that is a case treated by excessive amounts of fluids chiefly in the form of water by mouth; the terminal low blood chlorides and the clinical condition of the patient seem to bear out the views of the authors that water intoxication may be a factor in the death of these patients.

The second case reported that one in which serum proteins and chlorides were controlled and played a part in the survival of a patient with a very extreme burn also bear out the fact that the forcing of fluids without control of these vital factors may be futile or even dangerous.

The local treatment of large burns should be instituted early with the thought of preventing infections and stimulating early healing. There is no further discussion of local treatment in this paper.

Further Comment: We read this paper several times with the thought of its particular application to the management of extensive burns. We feel that a large amount of fluid should be given within the first 24 to 48 hours following a burn purely for the replacement of fluid loss. Following this time there is hemoglobin concentration and blood protein loss. This may be controlled by serum transfusion together with a maintenance of blood salts by the substitution of chlorides.

This is an excellent article and shows some advance in experimental work on burns with the detailed and exhaustive blood chemistry studies. It should be of value and worthy of consideration in the management of extensive burns.

(Note: I have in the past few months entered several articles in this division dealing with the subject of burns but since this is a season when more burns are seen and since it is one of the more important phases of both traumatic and reparative surgery I feel justified in entering two more articles dealing with early and late treatment.)

"Surface Defects Of The Hand." James Barrett Brown, M.D. F.A.C.S., St. Louis, Mo., American Journal of Surgery, December, 1939.

The author states that surface deformities of the hand may usually be successfully repaired with free skin grafts which many times give a more satisfactory result than pedicle flaps. This is not true of course in nerve and tendon loss.

Fresh burns of the hands which are superficial can best be managed by using wet packs or grease gauze. This, the author thinks is more satisfactory than sealing the area with tannic acid. The open method allows determination of the amount of loss and freer movement. If the entire depth of the skin is not destroyed, early healing and return of function may usually be expected without necessity of grafting.

Fresh deep burns of the hand, that is, where full thicknesses of the skin have been lost even over small areas in such a kinetic region as the hand, indication for treatment is to restore this loss as completely and as soon as possible. First treatment should be directed toward cleansing and debriding the area, then a daily saline soak for 30 minutes and a grease dressing will add to the comfort of the patient. Active movement should be encouraged in the soak. The average burn should be ready for grafting in about three weeks. If it has been extremely destructive it is sometimes advisable to "dress" the area with a split graft, allowing this to heal and "clean" the area in preparation for later reparative work.

Late deformities of the hand may be repaired by free split graft if these are cut thick and if tendons are not exposed in preparation for the graft. An ulcerated area such as an x-ray burn is possibly best treated by excising the ulceration and allowing a fresh granulation bed to develop prior to grafting.

Detailed methods of application of grafts are given by the author with adequate illustrations. Occupational therapy and physiotherapy treatments are indicated in any hand which has suffered injury and loss. Many of the finer movements for which the lumbrical and interosseous muscles are responsible may be greatly stimulated especially by occupational therapy. Secondary operations for improvements of joint function may some times help but these are rarely indicated.

Comment: This is an excellent example of an article in resume of treatment of defects of the hand. The article is general in its nature and gives many of the principles for both the fresh and late injuries which destroy tissues of the hand. Principles laid down here are early repair and early return to functions.

ORTHOPAEDIC SURGERY

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"A New Operation for Metatarsalgia and Splay-Foot," Arthur Krida, New York City, Surg. Gyn. & Obst. Vol. 69, No. 1, July, 1939.

This operation is indicated in those feet which are the "splay-foot" type, which is a result of marked relaxation of all the structures which hold the metatarsal region together. It is most commonly found in women in third and fourth decades of life. Apparently this is due to high heels and weak feet from childhood. Symptoms of metatarsalgia then make their appearance, of which the Morton's toe and the feeling of "walking on bones" are classical examples.

Recommended treatment has been support of the metatarsal arch; wider shoes with lower heels; development of the intrinsic foot musculature by exercises; and some type of operation for the hallux valgus, which often accompanies the condition. It is practically impossible to get most women to go through this procedure, consequently is not a procedure which meets the approval of most people.

The author describes an operation which consists of encircling fascial band around the heads of the metatarsals, which when completed holds them together and to a certain extent relieves the bunion. Technique of the operation is not to be considered in detail, although in the article the author describes it excellently. It is simple with the proper instruments and while the abstracter has not done this it is considered to be a very excellent article to be added to the literature for orthopedic surgeons.

"Solitary Myeloma of Bone. A Clinical and Pathologic Entity." Joseph G. Pasternack and Richey L. Waugh. Annals of Surgery, CX, 427, Sept. 1939.

Histological examination of the tumor by a competent pathologist and careful roentgenographic examination of the skeleton or complete and thorough necropsy are nec-

essary to substantiate a diagnosis of solitary medullary myeloma. On the basis of these criteria, the authors have analyzed thirty cases of solitary myeloma, with or without subsequent generalization of the disease, collected from the literature, and have presented a very complete report of an additional case which they have observed for seventy and one-half years. Data on these cases are shown in tabular form and include age, sex, primary site, roentgenographic appearance, Bence-Jones protein, duration, observation period, pain, swelling, pathological fracture, treatment, and progress.

The youngest patient was nineteen months old, and the oldest was sixty-eight years old. Excluding the infant, the average age was forty-nine years. Twenty of the patients were male and eleven were female. Pathological fractures occurred in 42 per cent of the cases. The following bones were involved: femur, nine cases; ilium, seven cases; humerus, five cases; vertebra, four cases; maxilla, two cases; parietal bone, two cases; tibia, one case; and clavicle, one case. In 66 per cent of the cases of solitary myeloma the roentgenographic appearance was that of giant cell tumor or bone cyst. In most of the remaining cases the appearance suggested matastatic carcinoma. Treatment of the cases varied; roentgenotherapy, curettement, excision, and amputation were used.

In true solitary myeloma the prognosis is good. Five patients have been observed for from four to nine years and have remained cured or the disease has been arrested, and no secondary foci have developed.

The following list includes some reprints of good orthopedic articles that have come to my desk recently:

"The Use of Vitallium as a Material for Internal Fixation of Fractures," Willis C. Campbell and J. S. Speed, Annals of Surgery, July, 1939.

"Stabilization of the Hip Joint," Willis C. Campbell, Amer. Jr. of Surg. April, 1939.

"The Autogenous Bone Graft," Willis C. Campbell, Jr. Bone & Joint Surgery, July, 1939.

"Ununited Fractures of Neck of Femur," Willis C. Campbell, Surg. Gyn. & Obst. Nov., 1939.

"Amputation of the Foot, with Calcaneotibial Arthrodesis," H. B. Boyd, Jr. Bone & Joint Surg. Oct., 1939.

"Pseudomycotic Leg Ulcers," J. F. Hamilton, Jr. Okla. State Med. Ass'n. October, 1939.

"Rating of Disabilities," Myron O. Henry. March, 1939. Minnesota Medicine.

"The Orthopaedic Care of the Arthritic Patient," Herman F. Johnson & Gordon Whiston, Nebr. State Med. Jr. Aug., 1939.

"Recurrent Dislocation of the Patella," Frank R. Ober, Amer. Jr. of Surg. Feb., 1939.

"Management of Arthritic Joints from a General Point of View," Jan., 1939, Kansas City Med. Jr.

"Discoid Cartilage, Trigger Knee," Frank R. Ober, Surgery, July, 1939.

"Posterior Bone Block in Talipes Equinus," W. B. Carrell and H. M. Childress, Southern Med. Jr., May, 1939.

"The Role of Posture in Chronic Arthritis," Henry H. Jordan, New York St. Jr. of Med., Oct. 1, 1939.

CARDIOLOGY

Edited by F. Redding Hood, M. D.
1200 North Walker, Oklahoma City

"Fainting Attacks—The Mechanism and Treatment of Certain Clinical Types." E. G. Ferris, M.D. Ohio State M.J. 35: 933-337 (Sept.) 1939. Reprinted in Modern Medicine, January, 1940.

(Although this article was published in the Ohio Journal, the abstract was published in Modern Medicine, I feel it is well worth repeating here. F.R.H.)

A soldier on parade faints in the sun; his sweetheart, receiving a telegram that he has been killed, swoons on the floor. The soldier is a victim of hydrostatic syncope, in which excessive hydrostatic pressure, resulting from the upright position, has pooled blood in the veins and prevented it from reaching the brain. In the girl's case, the fainting attack is of psychogenic origin. These are but two of the many types of fainting attacks classified by Eugene B. Ferris, Jr., M.D., assistant professor of Medicine at the University of Cincinnati (Ohio) College of Medicine, according to the circulatory changes responsible for unconsciousness.

The varied etiology of fainting attacks and the numerous mechanisms by which they are produced require that the treatment change with the cause. In any case, correction of the precipitating and predisposing factors is necessary. However, fainting due to a hypersensitive carotid sinus may sometimes be relieved by surgical denervation of the sensitive sinus (Ferris reports eight cases in which this was successfully done) or possibly by the administration of ammonium chloride, while shock due to actual loss of fluid from the vascular system must be treated by replacing the fluid and correcting the cause. Though fainting is usually caused by acute cerebral anoxemia, recent evidence suggests that this is not always the case. In the so-called cerebral type of carotid sinus syncope and in cases of psychologenic origin, the fainting occurs without any change in the blood pressure or heart rate and apparently without any change in the total flow of the blood to the brain. Symptomatic treatment is required.

The carotid sinus, located at the bifurcation of each common carotid artery, has among other functions that of maintaining a constant cerebral blood flow by reflex regulation of the peripheral circulation. The carotid sinus may become hypersensitive as a result of local pathological or functional changes or mechanical pressure from without. Spontaneous fainting attacks may be reproduced at will by pressure over a sensitive carotid sinus. Mechanical stimulation can be effected by pressing the carotid artery, at its bifurcation, against the spine and massaging it with the fingers for five to fifteen seconds, whereupon the sensitive patient will faint. There are three types of carotid sinus syncope (1) vagal, (2) depressor (3) cerebral.

Orthostatic syncope can also be experimentally produced. If a patient is given a small amount (1½ grains) of sodium nitrite, strapped to a tilting table and tilted to the upright position, fainting will occur. Sodium nitrite seems to decrease the venous tone so that when the patient is tilted into the upright position, the veins in the lower part of the body stretch and hold more than their normal amount of blood. Consequently, less blood returns to the heart and the arterial pressure falls. There is no specific drug that will prevent this reaction, but abdominal and leg binders sometimes helps to abolish symptoms.

Orthostatic syncope identical to that induced by sodium nitrite and tilting is common among debilitated and elderly patients who stand up too soon after severe ill-

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ness, in people who sit or stand too long in one position, and in victims of heat exhaustion.

Fainting differs from the common forms of medical and surgical shock chiefly in the rapidity of onset and recovery and in the fact that there is no change in the total blood volume, simply an excess shifting of the blood to certain areas.

Fainting attacks classified according to the sudden circulatory changes.

Classification	*Treatment*
1. Primary Cardiac Failure	
a. Reflex slowing or asystole, including the vagal type of carotid sinus syncope, vagovagal reflexes from the eyeball, esophagus, bronchi, pleura, etc., and certain types of vasovagal syncope.	Atropine, adrenergic drugs; epinephrine, ephedrine and benzedrine.
b. Asystol or slowing due to myocardial disease, including Stokes-Adams disease.	Adrenergic drugs.
c. Diminished cardiac output without slowor asystole, including ventricular arrhythmias, myocardial infarction, pericardial tamponade and sudden failure.	Treat the specific cause.
2. Primary Peripheral Circulatory Failure	
a. Arteriolar vasodilation, including the depressor type of carotid sinus syncope, postural hypotension and certain examples of psychogenic origin.	Adrenergic drug.
b. Venous pooling of blood, including orthostatic syncope, sodium nitrite syncope and heat prostration.	Trendelenburg position; counterirritation; non-specific preventive measures.

INTERNAL MEDICINE

Edited by Hugh Jeter, M. D., F. A. C. P., A. S. C. P.
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"Sulfamethylthiazol. A Report of Its Clinical Use in Staphylococcus Septicemia with Apparent Success. Report of Animal Experiments." Grayson Carroll, M.D., Louis Kappel, M.D., Lloyd Jones, Ph. D., Fred W. Gallagher, Ph. D., and Francis W. DiRocco, B.S., St. Louis, Missouri, Southern Medical Journal, Vol. 33, No. 1, January, 1940.

This is the most interesting and may prove to be one of the most valuable reports ever made. The authors have investigated the drug very carefully and extensively in connection with the protection of mice against Staphylococcus and also test tube experiments; have given their results and in addition have herein reported five clinical cases of Staphylococcus septicemia, all of which have apparently recovered.

A survival for fifteen days of five out of five animals which were injected with killing doses of Staphylococcus aureus is reported and, as controls, death in all of six nonmedicated animals with the same size dose of the same organism.

The clinical cases treated for Staphylococcus infections were as follows: (1) Kidney and perirenal infection; (2 and 3) pyelonephritis; (4) a breast abscess and (5) Staphylococcus septicemia from an infected umbilicus in an infant.

He concludes his report with a discussion as follows: "When we see all of a group of mice which were given the organism die, and another group of mice given the same number of organisms all live when given the drug, and five successive patients, three of whom were dying with septicemia, recover promptly when administered the drug, it is rather difficult to subdue one's enthusiasm. We shall further investigate the drug and note the experience of others with keen interest."

Comment: A physician in a neighboring city called my office recently stating that he had a case of Staphylococcus septicemia immediately following the delivery of a dead fetus and asked for advice as to treatment. I called his attention to the report of Dr. Carroll, which I had heard recently at Memphis, and suggested he wire the Winthrop Chemical Company at New Orleans for some of this drug to be given a clinical trial. (The drug is not as yet on the market for general use.) He obtained prompt cooperation with the Winthrop Chemical Company, received 50 grams of the drug, instituted treatment immediately and at the present writing, approximately three weeks later, he advises me that his patient has made a prompt and so far as can be observed by clinical findings and blood cultures, complete recovery.

This, to me, is by far the most interesting report in medical literature this month and is one which will doubtless be of interest to all internists and most other practitioners of medicine, because Staphylococcus infection ranks among the most common.

UROLOGY

Edited by D. W. Branham, M. D.
502 Medical Arts Building, Oklahoma City

"Hypertension's Challenge To Urology." Stanford W. Mulholland, Journal of Urology, December, 1939.

In this issue of the Journal of Urology are published several articles on the relation of hypertension to urologic diseases of the kidneys and particularly pyelonephritis. Dr. Mulholland's article heads the list of those who discuss this subject. Because of the growing attention paid this condition, it probably would be of interest to read his summary of the present status of this subject.

"There is a definite entity involving the renal circulation at the renal artery or inflammatory within the

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kidney itself that produces an elevation of the blood vessel tone. This pathological process can be determined and if diagnosed, removed with cure of the hypertension as proven in experimental work and clinical cases. Hypertension should be considered in the same light as a fever, it is a symptom rather than a disease. Every patient with high blood pressure should be given treatment especially planned for him; that means that this treatment may be inadequate and ill advised unless one knows the status of the kidney. I believe, urologists can cure an increasing number of cases of hypertension. Periodic physical examinations allows the internist to see many cases before symptoms develop.

"The layman is quite aware of the magnitude of the statement, "you have high blood pressure." Only recently I saw an article, discussing the question of violation of the medical practice act. The persons on trial had been operating a booth at a summer resort, where one could have the blood pressure taken for a fee of 10 cents. The controversy arose whether this was not illegal practice. We all agree, that a systolic blood pressure reading is only a fact, not a diagnosis. This fact, however, is undeniably associated by most persons with health. A reading of "high" blood pressure, would leave no average person undisturbed. The layman is willing to cooperate to chase down its cause. This is well exemplified, first in the advertisements that appear in the medical journals and swell the doctor's mail. A new drug, having remarkable powers of controlling hypertension is brought forth 2 or 3 times each year. The layman pays for these drugs and advertisements. Second, evidence comes in the frequent new operations for interruption of the nerves that influence blood vessel tone. These are mutilating operations of questionable enduring value. The patient grasps at either of these means in hope and desire for relief. The experimental work and clinical cases may explain the failure of many of the operations done on the nervous system for relief of hypertension. Perhaps following lumbar sympathectomy there is a relief of the vascular spasm in the renal vessels, and a temporary improvement in renal circulation. However, due to the vascular changes already present there is a return to the condition present before operation, so too does the blood pressure.

"Certainly before any case with hypertension should be subjected to any of the operative procedures now in vogue for relief of hypertension, the kidney should be ruled out as the possible cause of hypertension. Surely with all this evidence that the kidney may be the primary factor initiating the hypertension it demands the careful attention of every urologist. It is a real challenge to him to pick out the cases of pyelonephritis in the stage where pallor, underweight and slight albuminuria are the only signs. It is only by searching inquiry with the above facts in mind that we will be adding more and more cases to the literature and more cases doomed to a hypertensive end to our list of satisfactory results."

The discussion that followed these articles was very enlightening. Certainly the majority agreed that there is sufficient clinical evidence in instances of so-called essential hypertension to merit a more thorough investigation of the urinary tract than has been done in the past. Dr. Hugh Young aptly summed up the problem in the following:—

"Certainly the amazing mass of material that has been brought out today shows very conclusively that the kidney has a pressor substance in it which plays an extremely important part in hypertension, and that in all probability, instead of operating in many cases on the adrenals and splanchnic nerves, a much more careful study of the kidneys is indicated. It is quite possible that by renal operations a good number of cases of hypertension may be relieved. Another very interesting and important field is thus opened to the urologist."

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